MO-HITECH
HEALTH INFORMATION EXCHANGE OPERATIONAL PLAN

FINAL

JUNE 30, 2010

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1. INTRODUCTION

1.1 MO-HITECH Initiative Background

The Health Information Technology for Economic and Clinical Health (HITECH) Act within the 2009 American Recovery and Reinvestment Act (ARRA) provides an unprecedented opportunity for states to access federal funds to plan, design, and implement the infrastructure to support statewide health information exchange (HIE), and to encourage the adoption and use of electronic health records (EHRs). The State of Missouri is well positioned to take full advantage of this opportunity and is committed to ensuring its providers and patients realize the benefits of statewide HIE.

On August 20, 2009, ONC released a Funding Opportunity Announcement (FOA), formally signaling the availability of funding under the State Health Information Exchange Cooperative Agreement Program (the Program)[1]. The Program is designed to ~~"~~facilitate and expand the secure, electronic movement and use of health information among organizations according to nationally recognized standards." The FOA specifies that HIE developed and implemented under the Program must assist health care providers in meeting ARRA's EHR meaningful use requirements. The Medicaid and Medicare financial incentives associated with the HITECH Act demonstrate a significant investment to assist and accelerate providers' adoption and meaningful use of EHRs. Governor Nixon created the Missouri Office of Health Information Technology (MO-HITECH) within the Department of Social Services to lead a statewide effort to support Missouri providers' achievement of meaningful use.

The MO-HITECH HIE Strategic and Operational Plans seek to charter a vision for statewide HIE that ensures Missouri's providers are supported in their pursuit of meaningful use. The Strategic Plan began to address this vision through strategies that correspond to the five domains identified in the FOA: Governance, Technical Infrastructure, Finance, Legal/Policy, and Business and Technical Operations; Missouri has also established a parallel strategy track focused on Consumer Engagement.

1.2 Meaningful Use

On December 30, 2009, the Centers for Medicare and Medicaid Services (CMS) and ONC issued two regulations for public comment for the health IT incentive programs enacted under ARRA. The much anticipated regulations provide the federal government's proposed framework for the distribution of more than $44 billion in Medicare and Medicaid incentives to eligible professionals and hospitals for the meaningful use of certified EHRs. Specifically, CMS issued a Notice of Proposed Rule Making (NPRM) on the EHR Incentive Program; the EHR Incentive Program NPRM provides a framework for defining ~~"~~meaningful use of certified EHR technology" and the rules by which eligible professionals and eligible hospitals will demonstrate meaningful use for the Medicare and Medicaid programs. The proposed approach to meaningful use is an incremental, phased implementation across three stages, reflecting the expectation that the health IT infrastructure will change over time. The proposed rule defines the criteria for ~~"~~Stage 1" of this evolutionary process; stages 2 and 3 will be defined via future rulemaking.

As part of its review of the NPRM during the public comment period, the MO-HITECH Advisory Board and leadership from the Missouri Department of Social Services and Department of Health and Senior Services had the opportunity to interact with and be informed by the Statewide HIE Coalition, a Coalition of states and other stakeholders that are, like Missouri, working to facilitate the infrastructure and services necessary for nationwide adoption and meaningful use of health information technology. On March 15,

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[1] The Program implements the provisions of the American Recovery and Reinvestment Act of 2009 (~~"~~ARRA") that provide for grants to states and State-Designated Entities (~~"~~SDEs") to promote health information exchange. See ARRA § 3013. State Grants to Promote Health Information Technology. The FOA is available at http://healthit.hhs.gov/portal/server.pt?open=512&objID=1336&parentname=CommunityPage&parentid=47&mode=2&in_hi_userid=11113&cached=true#3.

2010 the MO-HITECH Advisory Board joined the Statewide HIE Coalition in support of its comments and recommendations to CMS regarding the Proposed Rule.[2]

The MO-HITECH Advisory Board believes that HIE, when governed statewide and in the public interest, can enable health care providers' access to information and ability to effectively use electronic health records (EHRs), subsequently improving the quality of patient care. The Advisory Board agrees with CMS that —HIEs promote adoption of certified EHR technology by providing the infrastructure for providers' EHRs to reach outside of their clinical practice sites and connect with other points of care."[3] Statewide HIE may also leverage the power of local, state, and national networks to:

- Facilitate the use of shared directories and technical services;
- Create economies of scale;
- Reduce infrastructure development costs, including the avoidance of costly point-to-point interfaces for data exchange among health care providers;
- Increase the success of EHR and HIE deployment; and
- Establish governance structures that achieve broad-based stakeholder buy-in and trust.

By making $564 million available to states and State-Designated Entities under the State HIE Cooperative Agreement Program, HHS has acknowledged the potential of statewide HIE to help health care providers use EHRs meaningfully.

To ensure that the Medicare and Medicaid EHR incentive program supports the continued development of the statewide HIE infrastructure envisioned by HITECH and supported by the State HIE Program, the MO-HITECH Advisory Board joined the Statewide HIE Coalition in respectfully recommending that CMS amend the Proposed Rule as follows:

- Create an alternative pathway for meaningful use, under which eligible hospitals (EHs) and eligible professionals (EPs) that participate in state-recognized HIE networks may be deemed to have met the Stage 1 meaningful use criteria that rely on HIE.
- Apply state-specific meaningful use objectives, including those that relate to participation in statewide HIE, to all eligible hospitals receiving Medicaid EHR incentive payments.

The CMS final rule on meaningful use is expected near the conclusion of the MO-HITECH collaborative stakeholder process when responsibility will be transferred to the Statewide HIO. Support of meaningful use guidance will be a specific objective of the new organization; MO-HITECH and the Missouri Department of Social Services intend to support the final meaningful use rule and regulations.

1.3 Missouri Vision for Patient Care

The MO-HITECH initiative and HIE Operational Plan remain committed to an improved vision for patient care as outlined by Governor Jay Nixon in Executive Order 09-27. As patients and their providers become increasingly accustomed to the use of health IT and HIE in their daily lives, patients will be empowered to take a greater and increasingly direct role in the management of their health care and the care of their loved ones. Patients experiencing traumatic illness, chronic disease, and even routine doctor visits will be directly affected by the incorporation of health IT and HIE into their physicians' medical

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[2] Statewide HIE Coalition NPRM Letter of Support. March 15, 2010. Please visit dss.missouri.gov/hie
[3] 75 Fed. Reg. 1933

practices. Patients everywhere will be empowered through electronic access to their and their loved ones' medical information to take an increasingly proactive role in their health care and improve their overall quality of life. This vision of improved patient care through the realization of meaningful use of EHRs among Missouri's physicians is the central focus of the MO-HITECH initiative.

Governor Nixon and the MO-HITECH initiative share the vision that Missouri's patients and physicians will realize the benefits of health IT and HIE to:

- Improve the quality of medical decision-making and the coordination of care;
- Provide accountability in safeguarding the privacy and security of medical information;
- Reduce preventable medical errors and avoid duplication of treatment;
- Improve the public health;
- Enhance the affordability and value of health care; and
- Empower Missourians to take a more active role in their own health care.

Meaningful use, as envisioned by CMS in its NPRM, will dramatically impact patient care by harnessing the potential of health IT and HIE to improve the continuity of care and informed medical decision-making. Table 1 below outlines how current patient experiences, ranging from registration to the prescription process, may be impacted as a result of meaningful use. *This vision will need to be continuously updated as greater guidance is announced regarding the various stages of meaningful use.*

Activity	2010	2015	Patient Impact
Patient registration	• Presents identification • Completes questionnaire • Signs HIPAA form	• Presents identification • Confirms demographic information recorded electronically	• Minimizes wait time
Patient vitals	• Nurses records and charts changes in paper chart	• Nurse records and charts changes in vital signs electronically	• Longitudinal view
Medication reconciliation	• Patient presents ~~-b~~rown bag" of medications • Doctor records and updates medication list in paper chart	• Doctor reviews active medication list with patient from recent visit • Doctor updates active medication list electronically	• Medication list is up to date and available electronically
Prescription	• Doctor prescribes medications based on diagnosis and known allergies	• Doctor generates and transmits prescriptions electronically with knowledge of patient eligibility, formulary, and medication history • Doctor is alerted to drug-drug and drug-allergy interactions	• Improved patient safety • Electronic refill requests generated without patient visit
Clinical Labs	• Patient is notified of lab results via mail or phone	• Lab results are integrated into doctor's EHR	• Improved patient care
Discharge	• None	• Patient provided with discharge instructions and procedures electronically	• Improved patient safety
Patient	• Patient may request	• Patients provided electronic	• Increased patient

Activity	2010	2015	Patient Impact
Access	paper copy of medical record	to medical record via PHR	engagement in care
Patient Follow Up	• None	• Electronic reminders generated and transmitted to patient for preventive and follow up care	• Improved patient adherence and compliance
Referrals	• Patient carries paper record	• Doctor accesses patient record in EHR	• Continuity of care
Population Management	• None	• Generate lists of patients by condition for outreach, quality improvement, reduction in disparities	• Patients are targeted for therapies, disease management

Figure 1. Meaningful use and patient impact

1.4 Collaborative Stakeholder Process

The State has continued to oversee and guide an open and collaborative stakeholder process to inform the development of the MO-HITECH Strategic and Operational Plans. Prior to the submission of its application to ONC's HIE Cooperative Grant Program the State hosted a series of HIE Regional Listening Sessions around Missouri to facilitate in-person stakeholder education and feedback; the State also hosted a public stakeholder meeting to inform stakeholders of its plan to submit an application and engage stakeholders in the strategic planning process. Following the submission of its application, Governor Nixon signed Executive Order 09-27 officially creating MO-HITECH and the MO-HITECH Advisory Board. In December 2009 the State launched the collaborative strategic planning process, hosting kickoff meetings with the MO-HITECH Advisory Board and six Workgroups: Governance, Technical Infrastructure, Finance, Legal/Policy, Consumer Engagement, and Business and Technical Operations; the Advisory Board continues to meet on a monthly basis and the Workgroups on a biweekly basis (every other week/twice a month), both in-person. In addition, the State has invited public review, comment, and feedback on the issues, questions, and deliverables that MO-HITECH is focused on. Specific elements of the collaborative process are described in greater detail below.

MO-HITECH Advisory Board & Planning Process

The MO-HITECH Advisory Board is charged with advising the state on the development of Missouri's health IT and HIE Strategic and Operational plans, and a long term plan for sustainability of Missouri's HIE infrastructure in compliance with the directives of ONC. The Advisory Board and Workgroups are co-chaired by members of the public and private sector and staffed by members of the MO-HITECH team and subject matter experts retained as consultants to support the process.

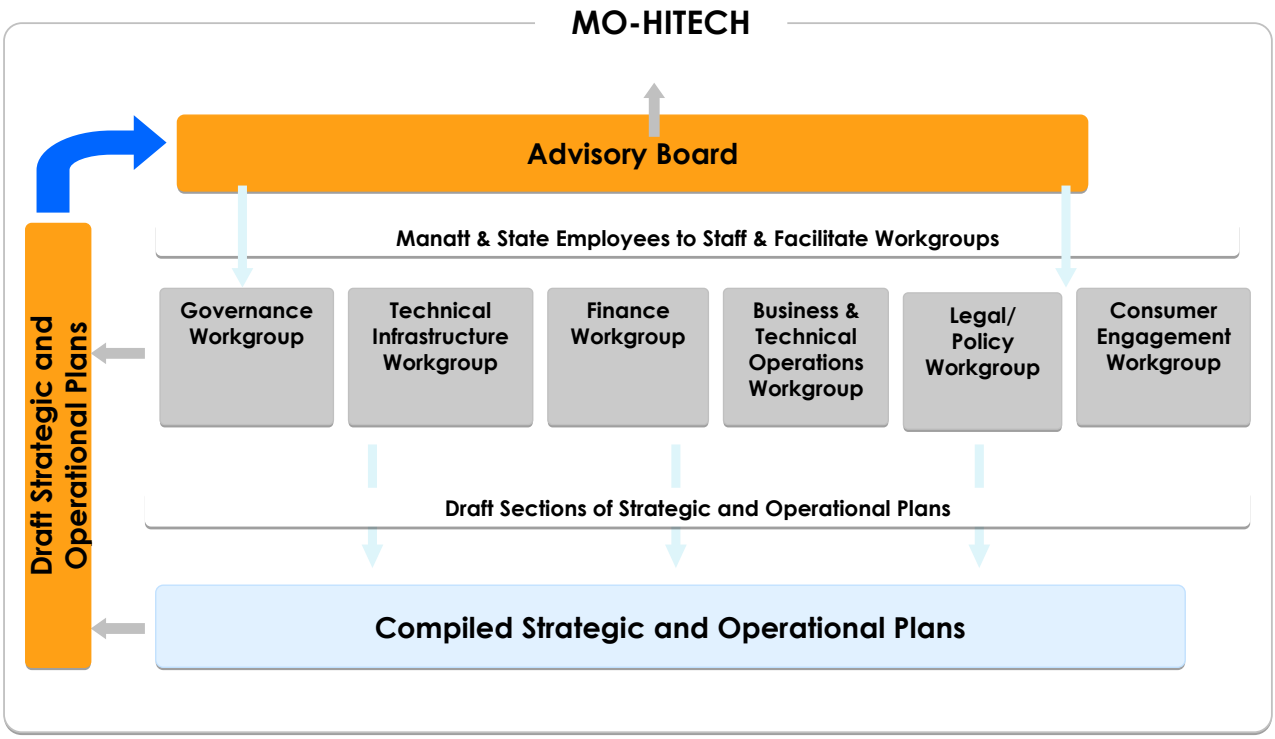
A detailed description of the Advisory Board and each Workgroup may be found in the Strategic Plan. A list of Advisory Board members and Workgroup Co-Chairs is provided in Appendices B and C.

The State has engaged Manatt Health Solutions (Manatt) to act as counsel and advisors to the State, providing both strategic advice and implementation/technical assistance. Manatt's engagement with the State supported the development of the Strategic and Operational Plans addressing statewide HIE development. The State has also engaged staff from Missouri's quality improvement organization (QIO) Primaris and counsel from Polsinelli Shugart, LLC (Polsinelli) to support the MO-HITECH initiative.

The charges of the Workgroups are largely interdependent and require communication among Co-Chairs and Workgroup members to ensure that the decisions of one Workgroup appropriately inform the others. The MO-HITECH staff meets regularly with the Co-Chairs to ensure that information is shared among Workgroups and also communicated to the Advisory Board. Figure 2 below depicts the relationship

among the Advisory Board and Workgroups as part of the overall strategic and operational planning process. Over 200 unique stakeholders have participated in-person in the MO-HITECH initiative via the Workgroups and Advisory Board.

Figure 2. MO-HITECH Strategic & Operational Planning Process



In order to ensure the broadest possible opportunities for input, the State has continuously offered stakeholder feedback mechanisms to complement and inform MO-HITECH, the Advisory Board, and Workgroups. In addition to ongoing opportunities for public comment and input via MO-HITECH Workgroup and Advisory Board meetings, the State has kept stakeholders abreast of developments through:

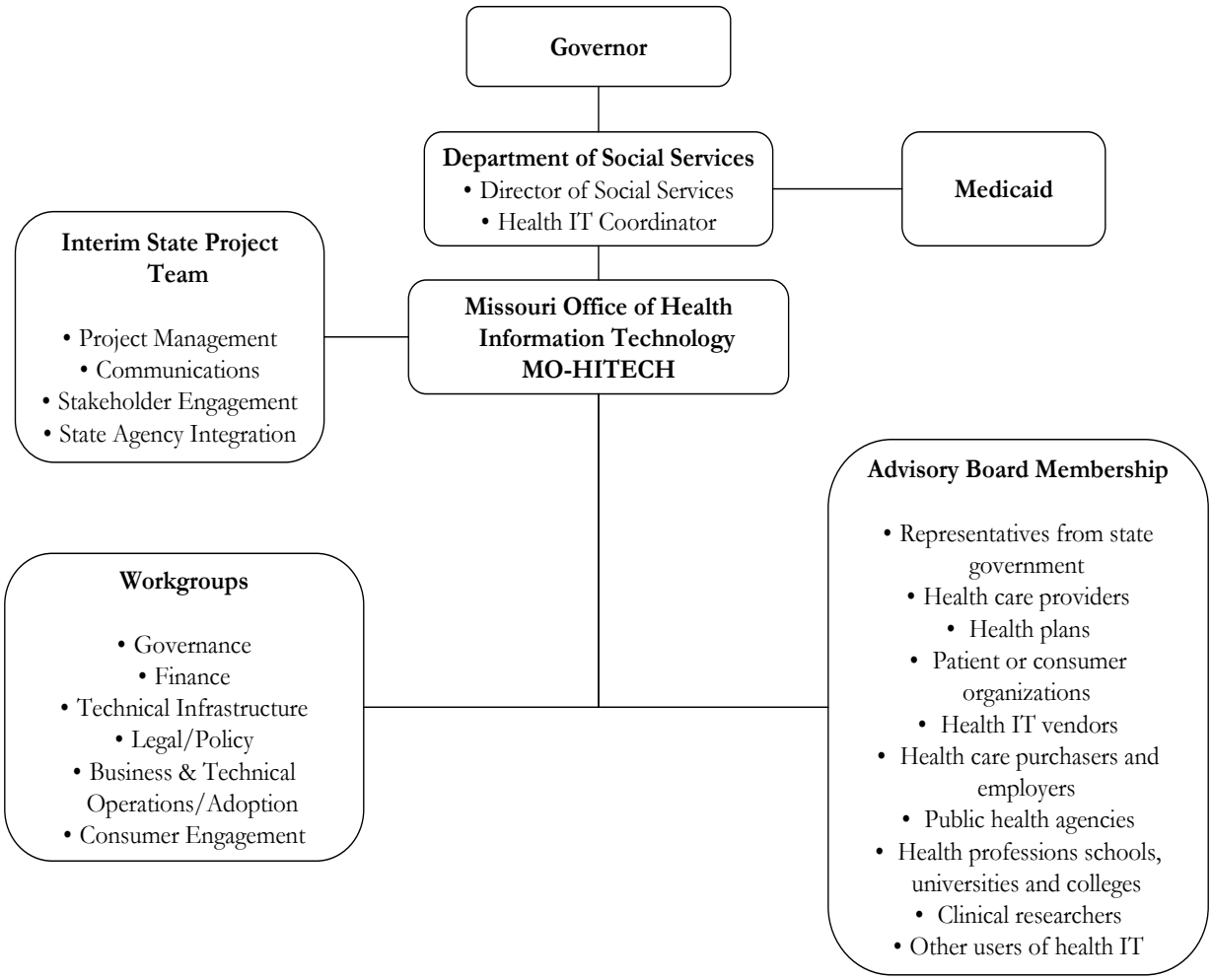
- **HIE Outreach Portal/Website and Listserv** (http://dss.mo.gov/hie/index.shtml): The State maintains and continuously updates an HIE outreach portal for the purpose of disseminating and collecting information statewide. The portal features regular project updates, Advisory Board and Workgroup meeting materials and summaries, and draft deliverables for public review and comment. The portal contains contact information for the project as well as frequently asked questions (FAQs). Individuals interested in receiving regular updates may request to be added to an HIE listserv that is maintained through the portal's administrator and used to send email blasts as determined necessary by MO-HITECH. Over 500 stakeholders are currently enrolled in the listserv.

- **Communications Team**: The MO-HITECH Communications Team has continued to support MO-HITECH strategic and operational planning efforts to ensure that regular communications are maintained with both the general public and target stakeholder groups. The Communications Team is responsible for drafting content and creating messages in alignment with the objectives of MO-HITECH and identifying vehicles for their dissemination in local and statewide media. MO-HITECH leadership and staff have established a Speakers Bureau and are working to provide qualified speakers for various audiences of stakeholder and consumer organizations around the state of Missouri. The Communications Team is staffed by members of MO-HITECH,

including representatives from DHSS, DSS, and the Office of Administration, and is coordinating closely with Governor Nixon's communications team.

Figure 3 below depicts the relationships among the State, MO-HITECH, Advisory Board, Workgroup, and supportive State project team.

Figure 3. Relationships among the State, MO-HITECH, Advisory Board, Workgroups, and State project team.



1.5 Transition Plan

The MO-HITECH initiative and its support for the stakeholder Workgroups will be transitioned to the new Statewide Health Information Organization (HIO). In an effort to maintain the momentum of the MO-HITECH initiative and ensure ongoing stakeholder involvement and participation in Missouri's statewide HIE efforts, there will be a transitional period between MO-HITECH and the Statewide HIO as the new organization is created, the Board of Directors is appointed, and a President and other key staff are hired. The figure below details the transition plan at a high level as envisioned by the MO-HITECH leadership and Workgroups. It is anticipated that most of the MO-HITECH Workgroups will continue on in their current form or as adjusted to meet the goals and objectives of the Statewide HIO. As depicted in the figure below, the Governance Workgroup will dissolve with the incorporation of the new organization and appointment of the Board of Directors; there will need to be continuing internal evaluation of the governance structure accomplished by the Statewide HIO's staff and Board. Workgroups to address issues around business and financial sustainability; technology and operations; legal and policy issues, and consumer engagement will remain critical. It is envisioned that the continuing Workgroups will be supported by a combination of consulting staff and Statewide HIO staff during the transition period, but ultimately the Statewide HIO staff will support all Workgroups and the overall collaborative stakeholder process. It is likely that subject matter experts (SMEs) in various disciplines will be called upon to provide industry expertise and guidance as needed and designated by the Board of Directors.

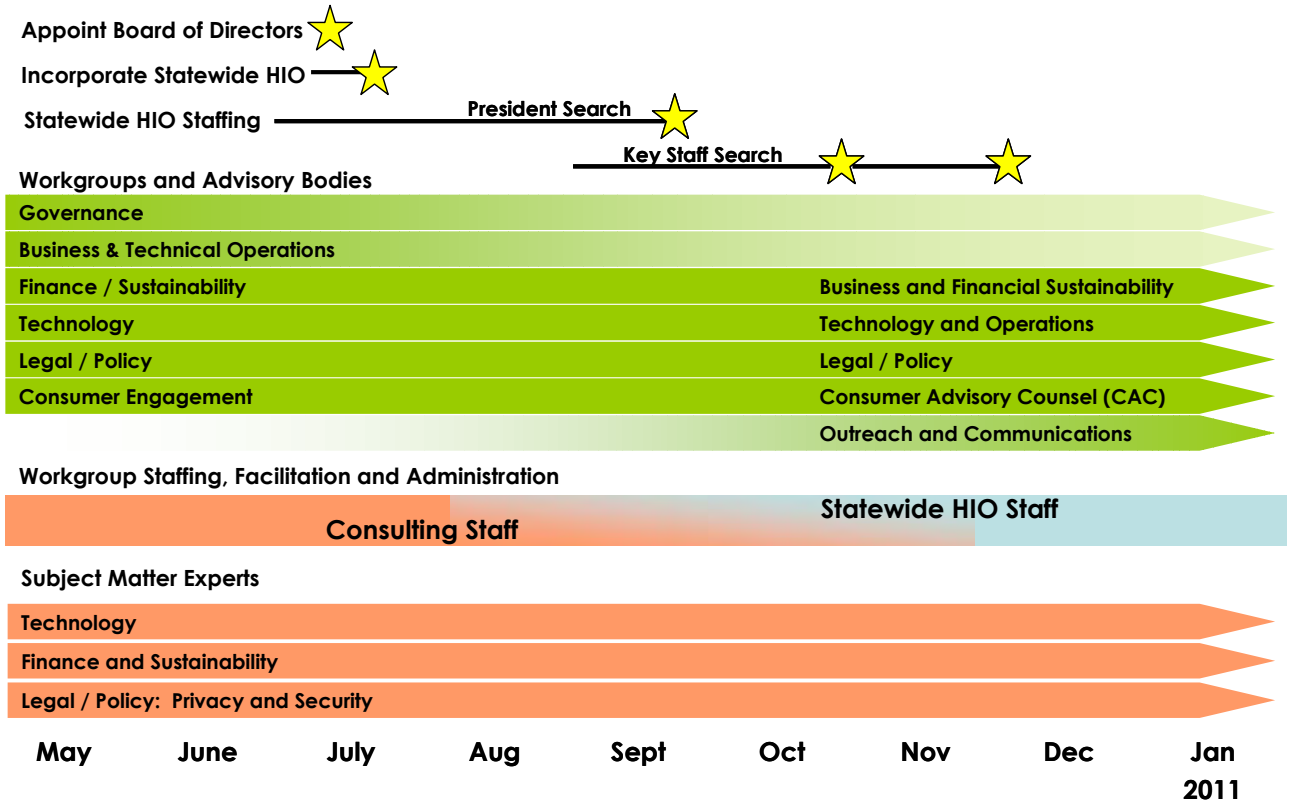


Figure 4. Transition to the Statewide HIO

2. APPROACH TO STATEWIDE HIE

2.1 Overview

The MO-HITECH collaborative stakeholder Workgroups have considered and deliberated various approaches to statewide HIE, ranging from a market-driven model to a State-owned and operated model. Figure 5 below depicts the continuum of approaches considered by the MO-HITECH Workgroups.

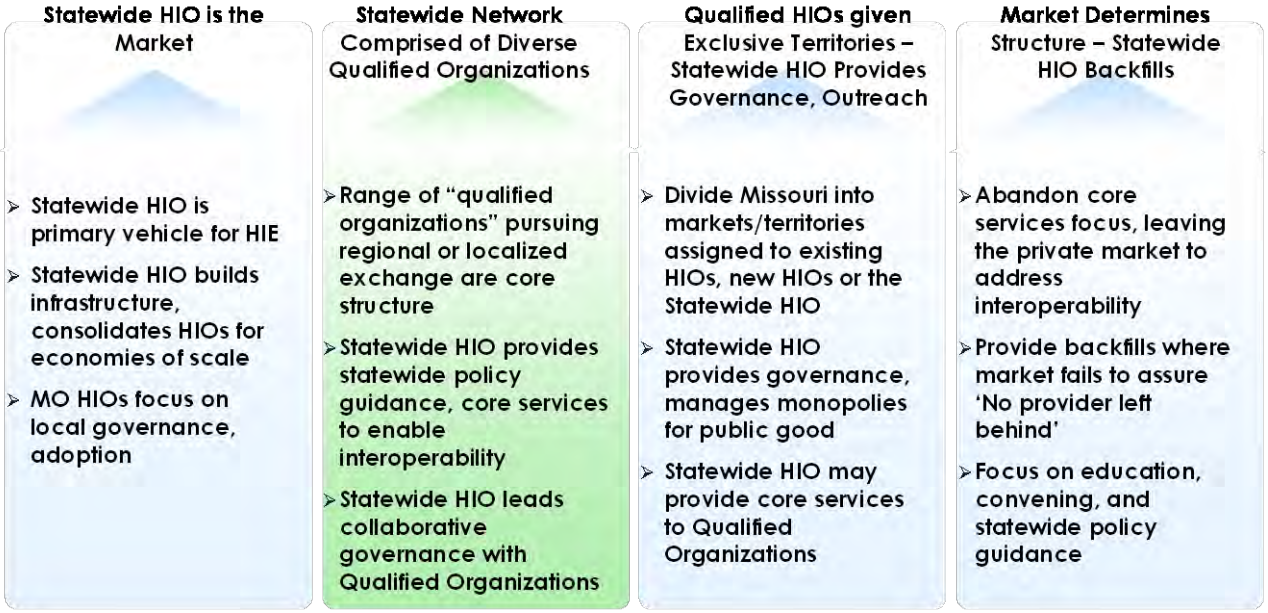


Figure 5. Approaches to Statewide HIE

Stakeholders considered the benefits and challenges associated with each approach, with special consideration of the approach's impact on provider and consumer trust and the current Missouri HIE landscape. Given the relatively nascent HIE market in Missouri and the desire to pursue an effective public-private governance model, Missouri intends to develop a ~~"S~~tatewide Network Comprised of Diverse Qualified Organizations." Stakeholders expressed concerns with a completely State or market-driven approach to statewide HIE; and while there are several emerging HIE initiatives in Missouri, there are not enough initiatives around the state to assign ~~"tr~~ading areas" that would effectively cover all of Missouri's providers . Hence, stakeholders have suggested that Missouri pursue a statewide HIE network of ~~"Q~~ualified Organizations" to provide core infrastructure and services to providers. This section describes in detail the approach to statewide HIE and how it will be implemented.

2.2 Statewide HIE Governance, Core Infrastructure, and Services

Statewide HIE in Missouri will be governed by a collaborative multi-stakeholder organization – the Statewide Health Information Organization (HIO). The Statewide HIO will be a new, not-for-profit organization to be overseen by a diverse Board of Directors and supported by executive, management, and administrative-level staff.

Strategic functions of the Statewide HIO will include the development and oversight of statewide policy guidance, as well as shared core technical infrastructure and services. Specifically, the Statewide HIO will:

- Define clear and consistent goals for participation in statewide HIE

- Define and adopt business, technical, and operational policies that participants comply with as members of a self-regulatory organization (e.g. Qualified Organization)

- Act as the agent for distribution of state and federal grant funds for statewide HIE development

- Ensure the availability of statewide technology services

- Coordinate with Missouri's Regional Extension Center – the Missouri HIT Assistance Center

- Establish business models for a sustainable, self-financing Statewide HIO

- Have the authority through contractual relationships to ensure compliance, enforce policies, and resolve disputes relating to participation in statewide HIE

The governance approach to statewide HIE, including an overview of the Articles of Incorporation and Bylaws for the Statewide HIO are detailed in Section 3 of the Operational Plan.

In addition to providing oversight for statewide HIE governance, the Statewide HIO will be the contracting agent and administrator for the statewide HIE network's core technical infrastructure and services. The Statewide HIO will issue a request for proposal (RFP) and enter into a technical services contract to build a service offering consisting of core infrastructure and services. Services are categorized as either:

- Core Services: Services that are required for the successful exchange of health information across the entire state; or

- Value-Added Services: Services that provide value to the participants involved in HIE.

The Statewide HIO's initial stage of implementation is scheduled to begin in the fourth quarter of 2010 and will include core services and core infrastructure. Meaningful use requirements for providers will be a primary driver of strategy for prioritization and deployment of statewide HIE value-added services, as well as supporting the sustainability of statewide HIE.

Please see Sections 5 (Technical Infrastructure) and 6 (Business and Technical Operations) for additional detail on core infrastructure, core services, and value-added services.

2.3 Qualified Organizations

A Qualified Organization is a health care organization or aggregator of organizations that is capable of fulfilling the technical, legal, policy, and procedural obligations defined by the Statewide HIO, and willing to enter a binding contract with the Statewide HIO. In addition to signing an agreement with the Statewide HIO, Qualified Organizations will need to integrate with and connect to the Statewide HIO to access core technical infrastructure and services on behalf of its providers.

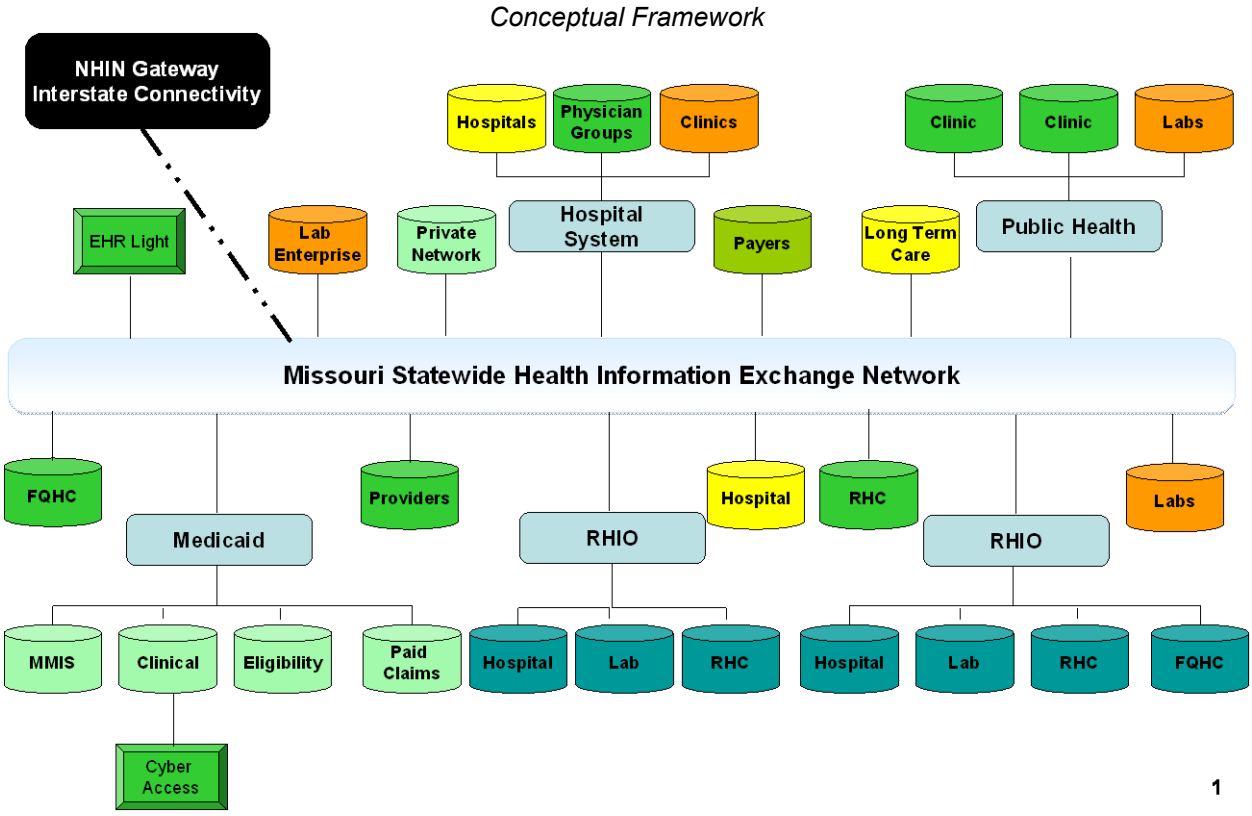
Qualified Organizations may be a variety of organizations or networks that have relationships with or provide services to providers. In the initial implementation of the Statewide HIO, access to patient information will be restricted to providers, regardless of the type of Qualified Organization through which a provider connects to the Statewide HIO. Potential Qualified Organizations may be, but are not limited to:

- Provider Networks
    - Consortia of providers
    - Federally qualified health centers (FQHCs)
    - Health systems

  - Hospitals
  - Integrated delivery networks (IDNs)
  - Provider groups
  - Local public health or public health organizations
- Regional HIOs
- Rural health centers (RHCs)
- Laboratories
- Pharmacies
- Private, Non-Provider Networks
  - Clearinghouses
  - Payers
  - Vendors
- Medicaid Network
- Missouri State Employee Health Plans

The figure below depicts the various Qualified Organizations that may connect to the statewide HIE network. Please note that the arrangement of Qualified Organizations relative to the statewide HIE network does *not* indicate preference or priority.

Figure 6. Statewide HIE Network Comprised of Diverse Qualified Organizations



Responsibilities of a Qualified Organization

Qualified Organizations will be required to comply with the Statewide HIO's statewide policy guidance and rules, in addition to sending and receiving health information through the statewide HIE network. The contract between the Statewide HIO and a Qualified Organization will specify the Qualified Organization's obligations to ensure that its participants/providers are also compliant with the Statewide HIO's policy guidance.

Qualified Organizations will be encouraged to participate in the continuing governance process managed by the Statewide HIO; as the Statewide HIO creates Workgroups and/or Advisory Bodies to oversee specific matters, it will be important for Qualified Organizations to participate and inform the continuing development of the Statewide HIO's policies and governance structure. The Statewide HIO will largely rely on the efforts, volunteerism, and knowledge of its members during its ~~-~~start-up" phase, much as the statewide HIE planning process has operated to date. It is anticipated that technical, legal, and other policy guidance will need to be continually evaluated and evolved as the Statewide HIO evolves and becomes operational.

Participation in the Statewide HIO is voluntary; a Qualified Organization may withdraw from the Statewide HIO, but withdrawal will be subject to reasonable rules and processes to ensure that the organization's providers are not left without access to the statewide HIE network and that proper assurances are taken with respect to data.

The figure below depicts the relationships among the State, Statewide HIO, and Qualified Organizations as part of a statewide collaboration process. Additional information regarding the development of statewide HIE policy guidance and contracting is discussed in Section 3 (Governance) and Section 7 (Legal/Policy).

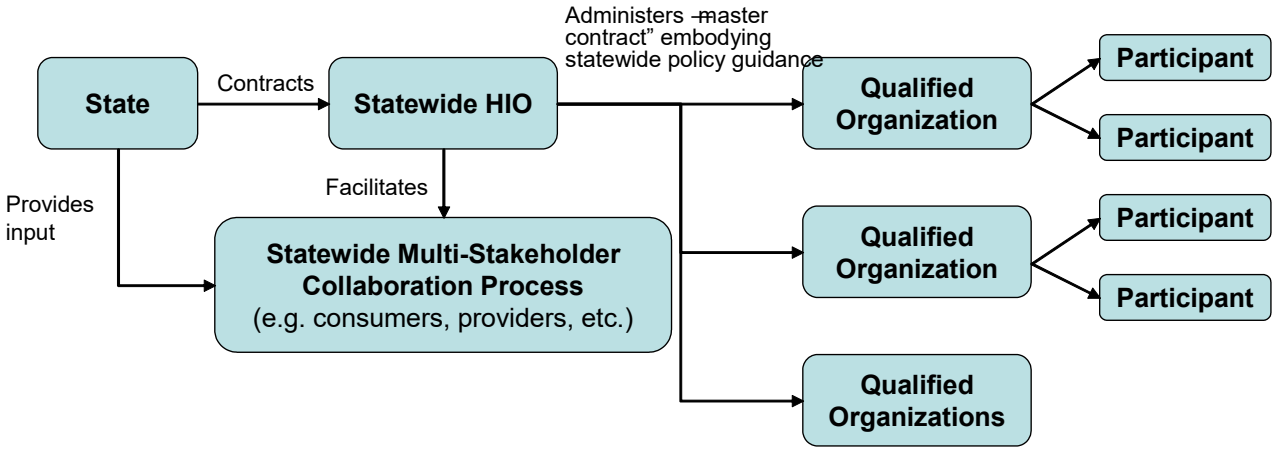


Figure 7. Statewide Policy Guidance Structure

Value of Statewide HIE to Qualified Organizations

Qualified Organizations stand to benefit significantly from participation in the statewide HIE network. Fundamentally, Qualified Organizations will support and facilitate the satisfaction of meaningful use requirements among its providers and increase provider access to data at the point of care. Participation in the statewide HIE network will also enable electronic access to Missouri state government information and services, including Medicaid data; this data will not otherwise be electronically available. Other benefits that are anticipated to accrue to Qualified Organizations include:

- Lower development costs of technical infrastructure and shared services offered through participation in statewide HIE, such as: Master patient index (MPI), consent management, lab orders and results delivery, and medication reconciliation
- Access to Medicaid meaningful use incentive payments
- Electronic access to public health data
- Access to best practices and learnings gathered by the Statewide HIO
- Participation in interstate HIE and the Nationwide Health Information Network (NHIN)
- Opportunity to expand referral networks and care coordination services

2.4 Commitment to No Provider Left Behind

Missouri remains committed to the principle of ~~–~~no provider left behind" as articulated in the MO-HITECH Strategic Plan:

> *"The technical infrastructure (of the Statewide HIO) will be designed and implemented to enable access by all participants/providers in Missouri. Attention will be paid to ensure that providers in rural communities and other areas where technical infrastructure may lag will have access to statewide HIE services."*

There are various avenues under consideration that the Statewide HIO may leverage to ensure all providers have access to at least one Qualified Organization, including:

- Require that Qualified Organizations accept any provider that applies; Qualified Organizations may be eligible for potential subsidies for working with providers who are outside of their typical

membership profile that may otherwise lack the financial resources required to participate in statewide HIE

- Require that Qualified Organizations ~~–~~bring on" a portion of providers who would otherwise lack access to statewide HIE (e.g. 10% of total provider participants)

- Expand the Medicaid technology platform to offer a low-cost portal for participation in the statewide HIE network

- Coordinate with the Missouri HIT Assistance Center to identify small and solo practitioners for alignment with a Qualified Organization or connectivity via the Medicaid technology platform

2.5 Cost of Participation in Statewide HIE

The cost of statewide HIE in Missouri cannot be carried by the Statewide HIO alone. To create and support a self-sustaining organization and HIE network, the Statewide HIO will need to charge Qualified Organizations for its services. Potential costs that Qualified Organizations may incur when participating in the statewide HIE network include:

- The cost of connectivity to the Statewide HIO (e.g. development of interfaces or system upgrades to enable connectivity)

- Participation fees proportional to a Qualified Organization's number of participants and/or number of transactions; there may be subsidies available for Qualified Organizations that connect participants outside of their typical participant profile (e.g. rural health centers, small or solo provider practices)

- The cost of utilizing value-added services that a Qualified Organization wishes to access; these services would be above and beyond the core infrastructure and services

The Statewide HIO will continue to consider and develop financing options to support the development of its infrastructure and sustainability.

2.6 Priority Use Case

The Statewide HIO must work quickly and aggressively to support meaningful use timelines as outlined in the proposed rule. The Statewide HIO will focus initially on the core infrastructure and services that enable Missouri's providers to satisfy meaningful use requirements. The use case below diagrams the Statewide HIO's initial phase one use case to support the stage one meaningful use requirement to ~~–~~push" clinical data from one provider to another provider. Additional use cases addressing other core services that will be critical in supporting stage one meaningful use and anticipated future stages of meaningful use can be found in Appendix D. These use cases include:

- Laboratory ordering and results delivery

- Retrieval of patient information

- Personal health record (information push to a patient's personal health record)

- Personal health record (information pull into a patient's personal health record)

The Statewide HIO will work to evaluate and prioritize future use cases for implementation in support of meaningful use and sustainability.

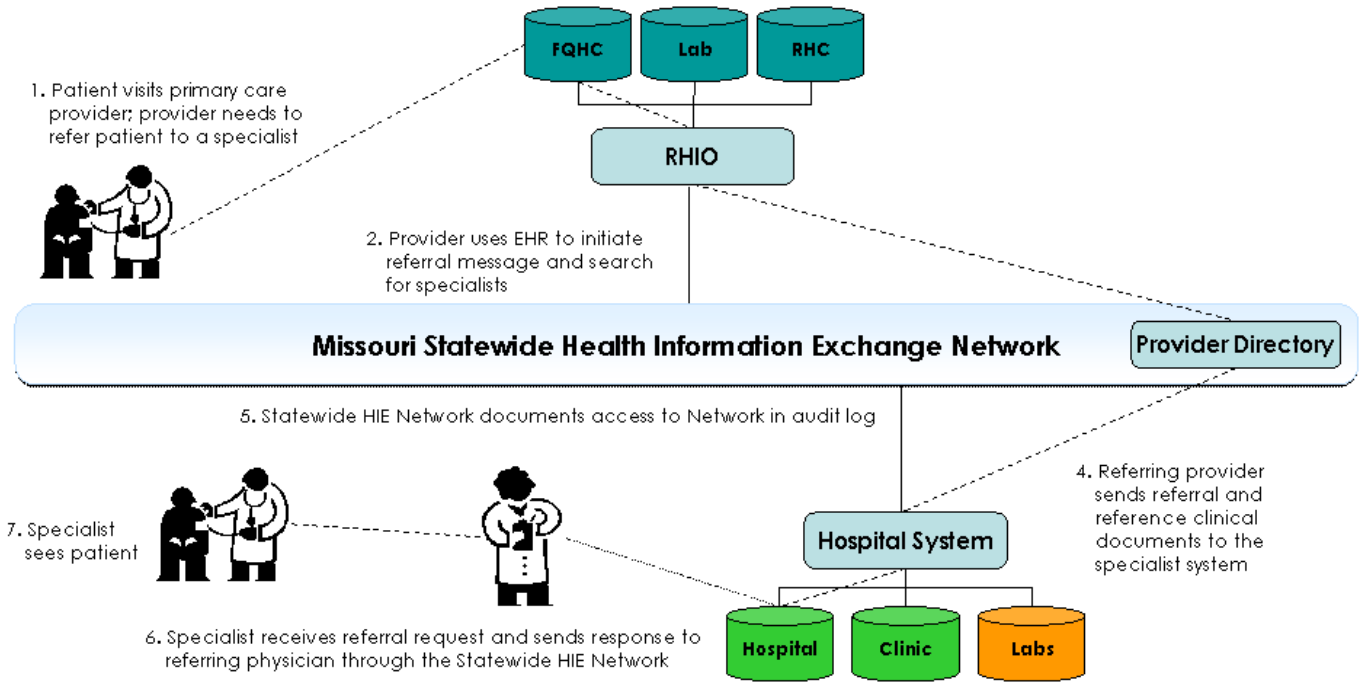


Figure 8. Priority Use Case

2.7 Timeline and Next Steps

A draft timeline outlining major activities to accomplish the above use case and support statewide HIE are outlined in the figure below. The timeline below is spread out over the four year project timeline, but it is anticipated that the Statewide HIO will be self-sustaining and operating beyond the project grant.

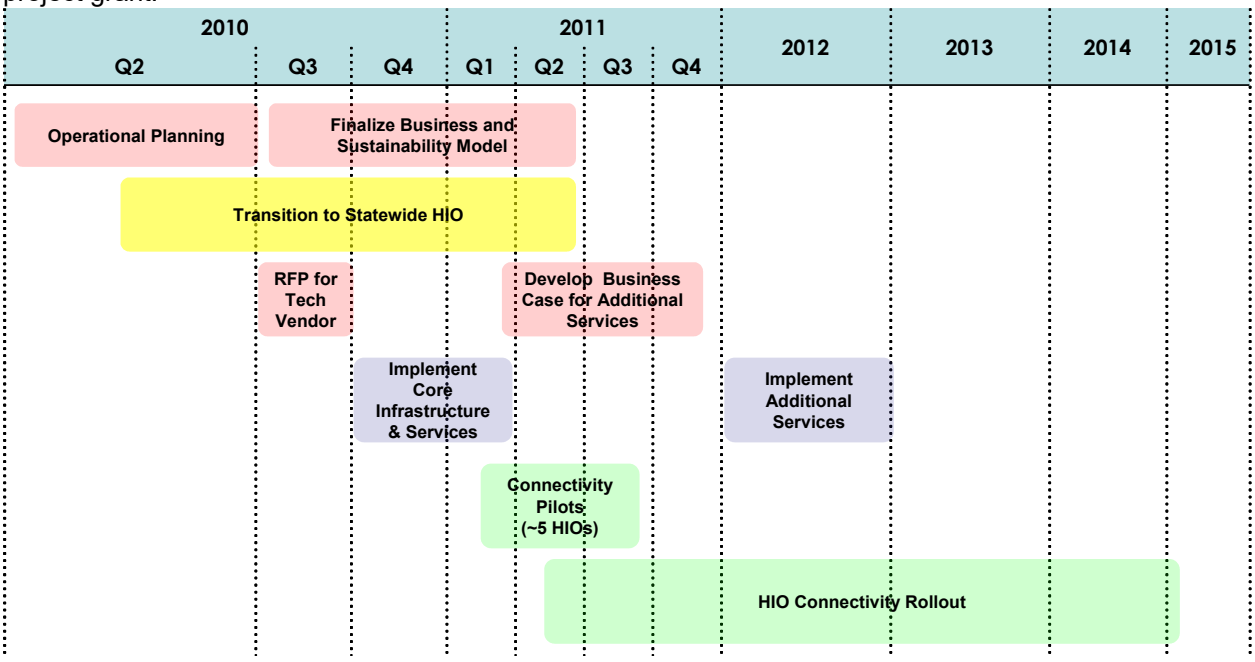


Figure 9. Draft Implementation Timeline Through 2015

3.0 GOVERNANCE

3.1 Overview

It is the strategy of the State of Missouri and MO-HITECH that an open and transparent multi-stakeholder public-private partnership should be charged with convening a statewide collaboration process to govern HIE in Missouri. This statewide governance organization – the Statewide HIO – will have involvement by State government but will not be a State agency. Instead, the Statewide HIO will be a not-for-profit corporation in which stakeholders come together to create trust in HIE in Missouri through the business, technical, and operational policies they adopt and agree to adhere to. The Statewide HIO will also provide oversight and accountability for HIE in Missouri. The State will have a permanent role in statewide HIO governance and certain authority to ensure that the Statewide HIO operates in the public interest. This approach, characterized by a collaborative stakeholder process, ensures that public health goals, as well as the goals of patients, providers, payers, and the State, will be addressed in the public-private governance process.

Missouri recognizes that an incremental approach is necessary to realize the benefits of its governance strategy. This section of the Operational Plan will describe certain precise elements of MO-HITECH's governance strategy, and how the governance strategy relates to the other principal domains of MO-HITECH's HIE strategy and to the HIE strategies of other federally-funded health programs in the state. Articles of Incorporation and Bylaws for the new organization have been reviewed and approved by local counsel, the MO-HITECH Governance Workgroup, and the MO-HITECH Advisory Board.

3.2 Operational Planning

Organized efforts to build consensus around a governance strategy for statewide HIE in Missouri have continued beyond the development and submission of the MO-HITECH Strategic Plan. The Governance Workgroup has remained open to all interested stakeholders; its meetings have been well attended and its deliberations have focused on the development and review of the Articles of Incorporation and Bylaws (Constitutive Documents) for the Statewide HIO, as well as the nomination process for the Statewide HIO's initial Board of Directors. MO-HITECH retained experienced local counsel, Polsinelli Shughart PC, to ensure that the legal foundations and requirements for the Constitutive Documents are addressed appropriately and with respect to Missouri law. The Workgroup's meeting materials and meeting summaries are accessible online at http://dss.mo.gov/hie/leadership/governance/meetings.shtml.

The Governance Workgroup's recommendations have been presented to the MO-HITECH Advisory Board for review and consideration, and ultimately to MO-HITECH and the State for approval. An overview of the Articles of Incorporation and Bylaws is below and the full documents are provided in Appendices E and F.

3.3 Articles of Incorporation

The Articles of Incorporation name the Missouri Statewide Health Information Organization (~~t~~the Organization") as a public benefit corporation. The Articles of Incorporation describe the Organization's purposes to include:

> *"…the promotion of public health and lessening the burdens of the government by improving the quality and outcomes of patient care, empowering consumers to take a more active role in their health care, and reducing health care costs through the establishment of a policy framework that will enable the creation and maintenance of an effective health information exchange infrastructure in the State of Missouri and, if so determined by the Board of Directors of the Corporation, through the ownership and operation of elements of such infrastructure and the creation and offering of shared services to enable the secure and efficient exchange of clinical information to improve public health and patient care."*

The provisions in the Articles specific to the Organization's purposes may not be altered, amended, or repealed without the Governor of Missouri's prior approval.

The Articles of Incorporation specify that the initial Board of Directors will consist of 17 individuals. MO-HITECH has undertaken a nomination process to recommend and name the initial Board of Directors with the submission of the current Operational Plan (see Section 3.5).

3.4 Bylaws

The Corporation's Bylaws describe in detail the composition of the initial Board of Directors, Committees of the Board, Workgroups and Advisory Bodies, Officers of the Board, and other general provisions. This content is summarized below. The Bylaws also reference the Organization's purpose as described above in Section 3.3.

Board of Directors

The Missouri Statewide HIO will be overseen by a Board of Directors, initially constituted of 17 members including two ex-officio voting Directors: the Director of the Missouri Department of Social Services and the Director of the Missouri Department of Health and Senior Services; and two ex-officio non-voting Directors: an appointee from the Missouri HIT Assistance Center and the Director of MO HealthNet (State Medicaid Agency). At all times there will be representation of providers and ~~c~~consumer advocates" on the Board. (Please see Section 4.2 for the definition of ~~c~~onsumer advocate.") The Board should be broadly representative such that there is (a) ethnic, cultural, geographic, racial and gender diversity, and (b) no one industry group is disproportionately represented.

The initial term of the Directors will be one year; after the initial term, Directors will be divided as evenly as possible into three classes with respect to time to provide for staggered terms of office. Directors will serve three year terms before facing re-election and no Director shall serve more than two consecutive terms, excluding terms less than three years.

Directors will be nominated by a Nominating Committee of the Board; the Nominating Committee will recommend at least two, but no more than three, nominees for each open Board seat. Nominees will be subject to the advice and consent of the Governor of Missouri. Section 3.5 describes the nomination process for the initial Board of Directors.

A majority of Directors will constitute a quorum for voting purposes.

Directors will not receive compensation for their services in any capacity, but may be reimbursed for expenses incurred for meeting attendance; however ex-officio voting directors shall not receive expense reimbursement from the Organization in any manner that would violate state law.

Committees of the Board

The Board has the authority to designate one or more committees of the Board; the Board shall appoint members for service on each committee and at least two Directors will participate in the committees. Non-Directors may be appointed for service on advisory and other committees of the Board.

The Bylaws name three committees to be constituted by the Board:

- Executive Committee
- Nominating Committee (Directors up for re-election may not serve on the Nominating Committee)
- Finance and Audit Committee

Workgroups or Advisory Bodies

The Board may designate and appoint one or more workgroups or advisory bodies composed of subject matter experts to support the Board's activities and deliberations. The Board will name the members of such workgroups or advisory bodies and these groups will have no voting rights or binding authority over the Organization.

The Board shall designate a Consumer Advisory Council (CAC) consisting of ~~i~~individual consumers" and ~~c~~onsumer advocates" as defined in Section 4. The Consumer Advisory Council will submit names for consumer advocate nominees for service on the Board, as well as serve as a liaison between the Board, the Organization, and community.

The Board shall ensure provider engagement through Workgroups and/or Advisory Councils.

It is anticipated that the Board will constitute workgroups or advisory bodies on an as-needed basis, and as the Organization evolves and requires input specific to technical requirements and services; legal and policy issues; provider participation in the Statewide HIO; consumer engagement; and other issues that are not yet anticipated. At the outset of the Organization, these groups may likely reflect the Workgroups that were convened as part of the MO-HITECH Strategic and Operational Planning process.

Officers of the Board

At its annual meeting the Board will elect its officers including a Chairman, Vice Chairman, Secretary, and Treasurer. The Board may elect additional officers if deemed necessary. Officers will serve until a successor is elected at a subsequent annual meeting and individuals may hold more than one office at a time. The Chairman will preside over Board meetings; the Treasurer will serve as Chairman of the Finance and Audit Committee.

Conflicts of Interest Policy

As described in Section 4.5 of the MO-HITECH Strategic Plan, the Board will adopt a Conflicts of Interest Policy to ensure that the Statewide HIO will operate in the best interest of the public and avoid any actual or perceived conflict of interest that may undermine public trust. Directors may not participate in discussions or deliberations on matters in which they have a direct financial interest or that would create a perception of self-interest in decision making. Directors shall be obligated to disclose financial or other relationships that would create an actual conflict or appearance of a conflict of interest.

Missouri Sunshine Law

In an effort to ensure that the Statewide HIO operates with transparency, accountability and openness, the Statewide HIO will comply with the principles of the Missouri Sunshine Law with respect to the following areas:

- Meetings of the Board, advisory counsels, work groups or other committees of the Board and votes, actions and deliberations of such groups
- Financial records
- Procurement processes including solicitations, bids and results.

Amendments

Amendments to the organization's Bylaws may be adopted by a majority vote of all Directors. Specific Articles and provisions of the Bylaws shall not be altered, amended, or appealed without the Governor's prior approval, including those Bylaws pertaining to the:

- Organizational purposes and limitations
- Board of Directors election, class, and term
- Nomination, approval, and election of Directors
- Ex-Officio Directors
- Board composition
- Adoption of a merger, consolidation, or sale of property
- Consumer Advisory Council
- Missouri Sunshine Law

It is believed that it is in the spirit of the public-private organization to seek the Governor‘s advice and approval on such provisions that impact the Organization and its ability to ensure the protection of the public interest.

3.5 Nomination Process

Upon request of the MO-HITECH Advisory Board, the Co-Chairs of the Governance Workgroup constituted a Nominating Committee to oversee and recommend a process for the election of the initial Board of Directors. The Nominating Committee was convened in March 2010 and its members included:

- Steve Roling, President & CEO, Health Care Foundation of Greater Kansas City (Co-Chair)
- Ron Levy, Director, Missouri Department of Social Services and Health IT Coordinator (Co-Chair)
- Rob Fruend, CEO, St. Louis Regional Health Commission
- Scott Lakin, Principal, Lakin Consulting and Former Insurance Commissioner, Missouri Department of Insurance
- Laura McCrary, Director of Regional Health Care Initiatives, Mid America Regional Council
- Pat Mills, Director of Health Care Finance, Missouri State Medical Association
- Jerry Sill, Senior Vice President & General Counsel, Missouri Hospital Association

The Nominating Committee was charged with nominating candidates for the Board of Directors in accordance with the recommendations of the MO-HITECH Governance Workgroup and as described in Section 3.4 of the Bylaws including:

- Industry, ethnic, cultural, geographic, racial, and gender diversity should be manifested in Board membership
- The nominating process should achieve openness and transparency, including the solicitation of applications and nominations

The Nominating Committee developed and published a nomination form for Board candidates to solicit and collect nominations for qualified Directors. The nomination form was distributed to the MO-HITECH stakeholder listserv of more than 500 members, and posted to the MO-HITECH website for the duration

of the nomination process. Please see Appendix G for a copy of the nomination form.

The underlying goal of the nomination process was to identify a group of respected thought-leaders to guide the development of the Statewide HIO; the Nominating Committee is considering nominees with regard to their:

- Leadership experience, background, and ability to oversee the start-up of the new organization and implement the Strategic and Operational Plan;
- Perspective and knowledge of HIE; and
- Diversity and balance among multiple stakeholder categories.

The Nominating Committee encouraged nominations from business, industry, and health care thought leaders, representing:

- Health care providers, including physicians, health systems and hospitals, public health, behavioral and mental health, and safety net providers
- Consumer advocates and patients
- Employers and insurers
- Legal and health IT experts
- Other current and future stakeholders in Missouri‘s health care delivery system

The Nominating Committee reviewed over 120 nominees for the Statewide HIO Board of Directors, considering nominees in the context of their expertise, representative stakeholder membership(s), and desired diversity for the Board. The Committee met seven times over three months to deliberate before finalizing its recommendation to Governor Nixon and ultimately the MO-HITECH Advisory Board. Governor Nixon approved the slate of 36 candidates in mid-June and on June 24th the MO-HITECH Advisory Board approved the recommended slate of 17 candidates for the inaugural Statewide HIO Board of Directors. The initial membership of the Board is diverse with regard to geography, stakeholder membership, expertise, gender, and ethnicity. The inaugural Board of Directors of the Missouri Statewide HIO will consist of:

- John Bluford, President and CEO, Truman Medical Center
- Kim Day, Senior Vice President, Regional Markets, Sisters of Mercy Health System
- Margaret Donnelly, Director, Missouri Department of Health and Senior Services *(ex-officio, voting)*
- Karen Edison, MD, Co-Principal Investigator, Missouri HIT Assistance Center *(ex-officio, non-voting)*
- Laura Fitzmaurice, MD, Chief Medical Information Office, Children‘s Mercy Hospital
- Craig Glover, Chief Information Officer, Grace Hill Health Centers

- Tracy Godfrey, MD, Family Physician, Family Health Center of Joplin
- Melissa Johnsen, Private Citizen and Former Business Executive
- Sandra H. Johnson, JD, Interim Dean and Professor Emerita of Law and Health Care Ethics, Saint Louis University School of Law
- Herb Kuhn, President and CEO, Missouri Hospital Association
- Ronald Levy, Director, Missouri Department of Social Services *(ex-officio, voting)*
- Ian McCaslin, MD, Director, MO HealthNet Division *(ex-officio, non-voting)*
- Steve Roling, President and CEO, Healthcare Foundation of Greater Kansas City
- Andrea Routh, Executive Director, Missouri Health Advocacy Alliance
- Steve Walli, President and CEO, United HealthCare
- David Weiss, Senior Vice President and CIO, BJC Healthcare
- Karl Wilson, President and CEO, Crider Health Center

Please refer to Appendix H for a detailed view of the Directors and the constituencies they represent.

3.6 Authority and Involvement of the State

Statewide HIE must develop in a way that is fully consistent with public health and public policy objectives. The State has examined the mechanisms and legal issues associated with assuring that the State retains appropriate oversight authority with respect to the Statewide HIO. While it will be essential to maintain the integrity of the multi-stakeholder collaborative process in setting policy for the Statewide HIO, it is also the case that the State has a non-delegable role as the steward of State assets and the protector of the public interest that must be preserved. As a result, there are specific provisions in the Articles of Incorporation and Bylaws that may not be altered, amended, or appealed without the Governor‘s prior approval; these provisions are outlined in Section 3.4 (above) under Amendments.

The State has determined that State officials may serve as Board members of the Statewide HIO; two Board seats will be reserved for the Director of Social Services and the Director of Health and Senior Services as ex-officio voting members of the Board. The Director of MO HealthNet, the State Medicaid Agency, will also serve as an ex-officio, non-voting member of the Board.

The State will enter into a contract with the Statewide HIO for the provision of services that advance public policy objectives. Given that there is broad stakeholder consensus that no existing organization that would be capable or willing to take on the responsibilities of the Statewide HIO, it is likely that a ~~-~~single feasible source” contract will be granted with the Statewide HIO; the Statewide HIO will subsequently receive funds for specific purposes approved by the State (including funds provided under the State‘s cooperative agreement with HHS pursuant to the FOA).

3.7 Ongoing Development of Governance and Policy Structures

It is envisioned that the Statewide HIO, at the discretion of the Board of Directors, will establish workgroups to continue the current activities and discussions of the MO-HITECH statewide collaborative process.

The Board of the Statewide HIO will be charged with evaluating the effectiveness of the governance structure recommended in the MO-HITECH Strategic and Operational Plans, and may elect to revise or adjust the structure of the organization to best meet and support the goals of the organization. The Statewide HIO will continue to evolve to meet developing needs in the marketplace. The governance functions of the Statewide HIO will be called on to demonstrate an institutionalized ability to change and grow to assure that HIE in Missouri meets the needs of all citizens of the State.

It will be critical that the Statewide HIO strive to achieve accountability and transparency in the governance of statewide HIE. In addition to embracing the principles of Missouri's Sunshine Law (as described in Section 3.4), the Statewide HIO will and establish clear and measurable goals for itself, including but not limited to:

- Diverse stakeholder involvement in the Statewide HIO at the Board and workgroup levels
- Measurement criteria for determining the extent of statewide coverage enabling providers to satisfy meaningful use criteria
- Specific mechanisms for coordination with Medicaid, the Missouri HIT Assistance Center, and other federally-funded state programs
- Regularity of reporting and breadth of dissemination of reports

3.8 Next Steps

The Articles of Incorporation and Bylaws have been reviewed and accepted by the MO-HITECH initiative and transparent stakeholder process; as a next step, a natural person must incorporate the Statewide HIO by filing the Articles of Incorporation with the Missouri Secretary of State. The Articles must name the Incorporators, and to the extent known, the Board of Directors. Upon incorporation, the Statewide HIO should file an application for 501c3 tax exempt status with the IRS; this process may take anywhere from three to six months.

The Statewide HIO will quickly need to ramp up staffing or contracted support to continue the collaborative HIE stakeholder process and support the efforts of the Board of Directors.

With the assistance of legal counsel, the State will need to develop and enter into a contract with the Statewide HIO, outlining the appropriate funding sources and mechanisms and respective evaluation and reporting requirements consistent with the Statewide HIE Cooperative Agreement Program.

The timeline below provides an overview of short and long-term tasks relative to governance of the Statewide HIO.

Task	Activities	Start	End
Short Term June – December 2010			
Incorporate Statewide HIO	• Identify incorporators • File Articles of Incorporation and Bylaws	7/1/10	7/30/10
Constitute Statewide HIO Board of Directors	• Constitute Board of Directors	7/1/10	7/30/10

Task	Activities	Start	End
Short Term June – December 2010			
	• Conduct initial meeting of the Board		
President Search	• Draft job description • Engage recruiting firm (if necessary) • Review and interview candidates	7/1/10	8/30/10
Develop Plan to Support Statewide HIO (Board of Directors, Workgroups, Advisory Bodies)	• Identify transition team • Work with Board to identify and prioritize tasks for Workgroups and/or Advisory Councils • Convene Workgroups and/or Advisory Councils as necessary • Engage subject matter experts to support Statewide HIO as necessary	6/1/10	12/31/10
Conduct Key Staff Search	• Draft job description • Engage recruiting firm (if necessary) • Review and interview candidates	7/1/10	12/31/10
Develop contract for Statewide HIO	• Draft contract with state and local counsels	7/1/10	8/31/10
File 501c3 Application for Tax Exempt Status	• File application for 501c3 tax exempt status	7/1/10	10/1/10
Develop Statewide Policy Guidance	• Develop statewide policy guidance through collaborative stakeholder process • Address emerging questions and issues relative to statewide HIE	7/1/10	Ongoing
Long Term 2011- 2015			
Evaluate Governance Structure	• Evaluate staff and support needs to meet Statewide HIO goals and milestones	1/1/11	Ongoing
Coordination	• Continue coordination with HIT Assistance Center, Medicaid, other states, and other organizations	1/1/11	Ongoing
Update Operational Plan	• Update Operational Plan on an annual basis for submission to ONC	1/1/11	12/31/14

4.0 CONSUMER ENGAGEMENT

4.1 Overview

MO-HITECH remains committed to utilizing health IT and HIE to empower Missourians to take a more active role in their own health care. While consumer engagement is not identified as a domain in the FOA, MO-HITECH believes that effective consumer engagement will be essential to the success of the Statewide HIO and HIE in Missouri.

The activities and recommendations outlined in this section are based on the discussions and deliberations of the Consumer Engagement Workgroup; the Workgroup began meeting regularly in December 2009 to address consumer engagement relative to the development of statewide HIE in Missouri. The Workgroup, comprised of consumers, consumer advocates, and representatives from the public, private and non-profit sectors, has helped to ensure that consumer perspectives are integrated throughout the MO-HITECH Strategic and Operational Plans.

4.2 Definition of Consumer Advocate and Individual Consumer

It is especially critical in large statewide efforts to have a common understanding and vocabulary upon which initiatives and outreach may be designed. For purposes of consumer engagement it is important that the Statewide HIO and its stakeholders operate with an agreed upon definition of "consumer." To develop a working definition, the Consumer Engagement Workgroup examined several definitions from health care and non-health related industries, and even looked outside of the United States for example definitions.

The Consumer Engagement Workgroup modified the definitions of "individual consumer" and "consumer advocate" from The National Partnership for Women and Families.[4] The definitions as adopted by the Workgroup and approved by the MO-HITECH Advisory Board are outlined below.

- **Individual Consumer:** A consumer is an individual who has significant personal experience with the health care system, either as a patient or family caregiver.

- **Consumer Advocate:** A consumer advocate is an individual who is affiliated with a nonprofit, mission oriented organization that represents a specific constituency of consumers or patients; his or her primary emphasis is on the needs and interests of consumers and patients. Consumer advocates are distinguished from other stakeholders because they:

    - Do not typically have a financial stake in the health care system
    - Are a trusted source of information in the community
    - Speak from a global perspective and have experience representing the diverse needs and wants of groups of consumers and patients
    - Have networks to empower and mobilize the community (e.g. via email lists, websites, meetings, newsletters, and conferences) and share information and messages
    - Have established relationships with the media, policymakers, and elected officials
    - Have a background in health care or understanding of the health care system

[4] National Partnership for Women and Families. Quality Tool Box. Fact Sheet – Consumer Definitions. Accessible online http://qualitycarenow.nationalpartnership.org/site/PageServer?pagename=qcn_ToolBox_ConsumerEngagement

These definitions are included in the Bylaws of the Statewide HIO with respect to representation of consumer advocates on the Board of Directors and the establishment of a Consumer Advisory Council (described below).

4.3 Consumer Advisory Council

The Bylaws of the Statewide HIO specify that the Board of Directors will establish a Consumer Advisory Council (CAC). Below is the framework for the CAC as recommended by the Consumer Engagement Workgroup.

Membership

- The CAC will consist of 13 members appointed by the Statewide HIO Board of Directors
- Membership on the Council should be comprised if individual consumers and consumer advocates as defined in the Bylaws of the Statewide HIO (outlined in Section 3 above)
- The CAC‘s membership should reflect appropriate diversity, such as: age, gender, race, ethnicity, geographic representation, consumer perspectives, income, and health care coverage

Functions

- Ensure meaningful recognition of consumer recommendations and perspectives by the Statewide HIO Board of Directors as it develops policies and programming
- Serve as a liaison between the CAC and its members‘ respective consumer organizations to facilitate two-way communication
- Inform and shape the consumer engagement outreach strategy and champion its messages
- Evaluate the impact of the Statewide HIO‘s policies and programming on Missouri‘s consumers
- Foster leadership development among CAC members and propose appropriate consumer advocate nominees for the Board of the Statewide HIO

Administration

- The initial meeting of the CAC should be in-person; at its initial meeting the CAC should establish a process to appoint a Chair or Co-Chairs of the CAC
- CAC members should be reimbursed for their travel costs to reduce any burden of participation
- The CAC should meet regularly, as well as ad hoc as needed to accomplish its goals and tasks; in its formative year(s) the CAC may need to meet monthly while the Statewide HIO finalizes and implements policies, and as consumer opinion and concerns are better understood
- CAC members may participate in meetings by teleconference or in-person; different meeting locations may be considered to accommodate the CAC membership
- The CAC should meet in-person at least once annually

4.4 Statewide HIO Consumer Staff Support

Missouri‘s commitment to consumer engagement cannot be realized without staff support from the

Statewide HIO. While it is recognized that resources are limited, it will be essential that the Statewide HIO dedicate staff resources to consumer engagement and outreach. The Workgroup recommends that there be support for various administrative activities and in support of the CAC; the recommended support is described in greater detail below.

Administrative Duties

- Manage relationships with partner consumer advocate organizations to develop, share, and promote messages about health IT and HIE
- Collaborate with Statewide HIO staff and management to ensure the consumer perspective is incorporated into planning and programming as appropriate
- Monitor regional, state, and national developments around HIE and its impact on consumers
- Serve as a liaison between the Statewide HIO and consumer advocate organizations
- Develop and manage budgets for consumer outreach strategy and the CAC

Consumer Advisory Council

- Work with the CAC Chair to ensure that the Council is meeting its intended objectives
- Contribute to and inform the development of CAC meeting agendas
- Provide administrative support (e.g. scheduling, meeting materials)
- Coordinate and distribute meeting summaries
- Conduct follow-up as needed to ensure programming is developed in a timely manner
- Facilitate bi-directional communication between the Board of Directors and the CAC

4.5 Consumer Engagement Strategy

The work and recommendations of the Consumer Engagement Workgroup have been critical to informing the MO-HITECH initiative and its sister Workgroups.

The Consumer Engagement Workgroup has largely completed the organizational activities and this work is reflected in the current Operational Plan (Sections 4.2, 4.3, and 4.4). Relative to ongoing activities, the Consumer Engagement Workgroup recommends that the Statewide HIO establish a consumer engagement and outreach program with staff support. The Workgroup has gone so far as to recommend target groups, points of engagement, and suggested media. These recommendations are summarized below.

Groups and Partners to Engage

It will be important to share messages and information through —trusted brokers" whom consumers regularly interact with and receive information from, recognizing that these trusted brokers are constantly evolving and changing to meet the demands an increasingly digital and social marketplace. The Consumer Engagement Workgroup developed the list below of suggested groups and partner organizations that may be engaged as partners to help disseminate messages and educational materials to raise awareness of HIE and its impact and benefits for consumers and their families. Please note that the list below is not intended to be comprehensive and should be revised and augmented as necessary to

ensure effective consumer engagement across the state.

- Providers and provider groups (e.g. medical association)
- Fraternal and community service organizations (e.g. Elks Club, Rotary)
- Veterans of Foreign Wars
- Unions (e.g. Postal Workers, United Auto Workers, etc.)
- League of Women Voters of Missouri
- Faith-based groups, churches, and synagogues
- Area Agencies on Aging
- Chambers of Commerce
- Health Care Foundations
- AARP
- Coalitions (e.g. disability advocates, mental health advocates)
- Employers
- Health insurers and health insurance exchanges
- Government agencies (e.g. Social Security)
- Assisted Living Facilities
- Schools
- Local public health departments
- Community based organizations serving communities of color, low wealth, and immigrant populations (e.g. El Centro, The Guadalupe Center)
- Health care associations (e.g. Alzheimer‘s, Cancer Societies)
- Missouri HIT Assistance Center (Regional Extension Center)
- Public libraries

In addition to working with groups and partner organizations to disseminate information, there are opportunities to engage with consumers and their families face-to-face or virtually to facilitate meaningful interactions or discussions about HIE. In the past when there have been changes in Medicaid coverage or benefits, Medicaid has found opportunities to interact directly with its beneficiaries; this can be an effective approach, especially when complimented with educational materials and other media campaigns. Various points of engagement for face-to-face interactions with consumers may include faith based activities; county and state fairs; senior centers; provider offices; schools; and a website operated by the Statewide HIO.

The Consumer Engagement Workgroup emphasized that provider offices will likely be one of the most effective points of communication with consumers. Physicians are seen as a trusted source of information in the community; as HIE becomes common place in physicians' practices it will become increasingly relevant and important for physicians to engage their patients in an open dialogue about HIE and address their questions and concerns. If a physician believes that HIE makes his or her practice better and increasingly safe for patients, his or her patients will likely also be supportive of HIE.

Social and Traditional Media

Today's consumers increasingly participate in electronic media, but it is critical that traditional media be incorporated to reach consumers in populations or regions who are less likely to have access to electronic media. Recognizing that vulnerable and underserved populations may stand to gain the most from statewide HIE, they may also be the least trusting of the transition to the electronic exchange of their personal health information. Therefore, it will be critical to reach out to consumers through diverse social and traditional media, including but not limited to:

- Radio networks and talk shows
- Public television
- Speaker circuit
- Focus groups/round tables
- The Missouri Telehealth Network
- Social networking sites (e.g. Facebook, Twitter)
- Text messaging/cell phone communications
- Media campaign (print, billboards, etc.)
- Consumer HIE Toolkit (e.g. FAQs, video/DVD, educational brochure)
- Media HIE Toolkit

The Consumer Engagement Workgroup recognizes that this is not a comprehensive list of media and recommends that it be regularly iterated to maximize the impact of resources directed to consumer engagement and outreach. The Statewide HIO should also monitor the activities of potential partner organizations (e.g. Health Literacy Missouri, Missouri Telehealth Network) for opportunities to collaborate and combine resources. As the Statewide HIO matures, the consumer engagement strategy should evolve to meet the needs of the Statewide HIO and Missourians.

4.6 Health Literacy

Health literacy is defined as the degree to which individuals have the capacity to obtain, process and understand basic health information and services needed to make appropriate health decisions.[5] Research has shown that up to half of all patients are not capable of understanding basic health care information, increasing the risks to patient safety and compliance with health care treatments.

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[5] North Carolina Program on Health Literacy. ~~"~~What is Health Literacy?" Accessible online at http://nchealthliteracy.org/about.html

In conjunction with the Legal/Policy Workgroup, the Consumer Engagement Workgroup reviewed various materials used to notify patients and obtain their consent for participation in a community or statewide HIE. Health Literacy Missouri[6] has been an active participant in the Workgroup and reviewed the materials relative to recommended health literacy ~~-c~~riteria" for patient-facing materials. As summarized in the table below, the reviewed materials did not comply with health literacy guidelines.

Document Characteristics	Recommended Characteristics	Actual
Reading level	6th grade	10th grade and above
Sentence length	Short	45+ words in one sentence
Words	Single syllable when possible	Multi-syllabic
Graphic layout/ design	White space, color, pictures/photos	Dense text, black and white
Context of forms	Accompanied by a video, class, etc.	Unknown
Pre-test	Materials should be tested with adult learning community	Unknown

Figure 10. Evaluation of Consent Materials Relative to Health Literacy Criteria

The Consumer Engagement Workgroup recommends that materials developed for public consumption be consistent with health literacy standards, and that layers of communication be utilized whenever possible to promote learning and raise awareness. The Workgroup also recommends that materials be tested with their target audience prior to dissemination; in addition to working with Health Literacy Missouri, there is an active adult learning community in Missouri that may be a good partner for the Statewide HIO to provide input and feedback on consumer-facing materials and the overall consumer engagement strategy.

4.7 Next Steps

Missouri recognizes the ongoing importance of consumer advocate and individual consumer engagement and education. The MO-HITECH initiative has provided a foundation for open dialogue with consumer advocates about the importance of statewide HIE and the importance of consumer education efforts. The Statewide HIO will ultimately need to hire and train staff to support the Consumer Advisory Council and consumer engagement strategy outlined in the Operational Plan. It is anticipated that consumer staff support may not be readily available for the Statewide HIO and the work of the Consumer Engagement Workgroup may be carried forward by a similar body or by the Consumer Advisory Council. To date the Consumer Engagement Workgroup has conducted its work and planning activities through the generous donation of time by volunteers; it is hoped that the Statewide HIO will maintain and nurture its relationships with consumer advocate partner organizations to engender their support and participation going forward.

The timeline below reflects short and long-term activities the Consumer Engagement Workgroup envisions will help the Statewide HIO meet its consumer engagement outreach goals and further develop a comprehensive strategy with guidance from the Consumer Advisory Council.

[6] http://www.healthliteracymissouri.org

Task	Activities	Start	End
Short Term June – December 2010			
Monitor Local, State, & National Opportunities for Consumer Engagement	• Participate in webinars and educational opportunities • Share learnings and information with Board and CAC	7/1/10	Ongoing
Appoint Consumer Advisory Council (CAC)	• Identify nominees and gather background information • Assist Board with appointment of CAC as requested	7/15/10	8/15/10
Inform Key Staff Search	• Review draft job descriptions • Provide input as requested	7/30/10	12/31/10
Work with Consumer Advocate Board Member(s)	• Host initial meeting with Consumer Advocate Board member(s) to discuss work to date and recommendations, concerns • Identify mechanism for communication with Board member(s)	8/1/10	Ongoing
Develop Consumer Engagement & Communication Plan	• Review recommended consumer engagement and communication strategies • Prioritize strategies based on available resources and estimated impact • Identify and contact partner organizations to facilitate planning and outreach	8/1/10	8/30/10
Develop Consumer —FAQs"	• Draft frequently asked questions (FAQs) • Review with Health Literacy Missouri and revise to be consistent with health literacy principles • Host focus group to review FAQs and identify additional questions	8/1/10	12/31/10
Develop —Calendar" of Events	• Identify partner organizations for consumer engagement efforts • Identify local and regional opportunities for consumer engagement	8/15/10	9/15/10
Develop Mechanism for Consumer Engagement	• Consider traditional and social mechanisms to solicit consumer feedback and engagement • Test strategies and measure impact	8/15/10	Ongoing
Evolve Consumer Engagement Strategy	• Evaluate consumer engagement activities and revise strategy as necessary	9/1/10	Ongoing

5.0 TECHNICAL INFRASTRUCTURE

5.1 Overview

Missouri's broad objectives are to:

- Lay the basis for robust clinical exchange of information among all stakeholders in Missouri to improve the health of Missourians
- Support providers' ability to satisfy Meaningful use criteria (stepwise through all phases)
- Ensure connectivity with the Nationwide Health Information Network (NHIN)

Missouri's approach to developing a statewide technical infrastructure rests on the assumption that new work must proceed quickly yet leverage the substantial investments in existing public and private systems. New systems and processes put in place must be flexible and adaptable to an ever-changing environment where an individual's health and well being are the ultimate goal. Creating robust statewide HIE in the midst of this environment is a significant challenge and Missouri has placed substantial effort into the design of a technical infrastructure capable of managing systems and processes within this dynamic health care environment.

As described in the Strategic Plan, Missouri intends to establish a Statewide HIO to facilitate governance and statewide policy guidance for HIE, as well as contract for core infrastructure and services. It is envisioned that the Statewide HIO will be capable of providing its participating organizations and their participants with efficient access to interstate exchanges enabling economies of scale for widely deployed intrastate services such as provider directories. The Statewide HIO will ensure that all areas of Missouri will have access to statewide HIE services through a Qualified Organization or alternative web portal/EHR light. Importantly, the Statewide HIO will be the vehicle for coordination with Medicaid and State Government to integrate and leverage valuable information and assets including existing and future investments of the state Medicaid program, the statewide immunization registry, and others.

5.2 Request for Information (RFI)

Missouri's technical infrastructure, services approach, and project scope has been informed by a Request for Information (RFI) developed and issued to obtain market information on functional capabilities and component pricing. MO-HITECH issued the RFI on March 26th and subsequently hosted a webinar attended by over 150 interested stakeholders. RFI responses were due on April 16th and MO-HITECH received 20 responses; a copy of the RFI and a list of RFI respondents are provided in Appendices I and J respectively. Responses to the RFI are independent of any future request for proposal (RFP) and do not affect respondents' abilities to participate in a future RFP process.

The purpose of the RFI was to further inform the MO-HITECH operational planning activities. The RFI was specifically intended to:

- Validate the proposed Statewide HIO technical architecture and approach;
- Confirm or extend the proposed functional scope of the Statewide HIO;
- Evaluate maturity and readiness of functions in the marketplace;
- Scan the market for additional solutions;
- Understand size, complexity and resources necessary to proceed;
- Understand the budget feasibility for a prototype HIE model;

- Inform financial modeling efforts to estimate the cost of statewide HIE; and
- Inform the timeline and scope for a future request for proposal (RFP) to select and contract with a vendor for core infrastructure and services.

The RFI responses were evaluated at ~~"~~face value," with no effort to validate the responses; the purpose of the RFI was not to compare vendors or limit vendor participation in the upcoming RFP process.

Findings from the RFI process are summarized below; a more detailed analysis of the RFI responses may be found in Appendix K.

Technical Findings

Overall the RFI responses aligned with the proposed technical approach for the Missouri statewide HIE network; four of the responses were incomplete and could not be compared for alignment. All of the remaining sixteen responses were in alignment with the proposed technical approach. Details relative to the Statewide HIO's service standards, requirements, and consumption were identified for clarification by several respondents. The RFP will need to provide and clarify additional technical requirements, specify service levels across the statewide HIE network, and clearly define the role of Qualified Organizations in the statewide HIE network.

Functional Findings

Respondents generally confirmed or suggested extending the Statewide HIO's proposed functional capacity; eleven respondents exceeded proposed Stage 1 requirements, three respondents met Stage 1 requirements, and six did not provide complete responses. While only one respondent has significant production experience in the regional HIO and statewide HIE environments, multiple respondents described solutions that are maturing and have demonstrated capabilities in the marketplace.

A potential concern identified upon review of the RFI responses is the potential proprietary nature of proposed functionalities for the Statewide HIO. As the Statewide HIO moves ahead with an RFP process and vendor contracting, it will be important to ensure that the selected vendor's services may be offered as statewide services through broadly accepted standards and in compliance with HHS designated standards where applicable.

Implementation and Timeline Findings

Respondents generally avoided timelines or proposed generic timelines based on broad assumptions with only high level schedules. The majority of respondents did not provide an implementation timeline or are unable to meet the proposed timeline for implementation of the core infrastructure and services in six months beginning in the fourth quarter of 2010. Only six of the respondents indicated the capability to meet the proposed timeline. Respondents also demonstrated varying levels of implementation maturity and capacity.

For purposes of a future RFP, further definition of a potential prototype, with phased additions of connectivity and services, will be important so that respondents may provide commitments based on timelines and milestones.

Pricing Analysis

Only five respondents took a serious pass at developing a pricing model based on a prototype described in the RFI. The proposed pricing models included costs for implementation, interfaces, ongoing support, and application type fees. Most vendors provided pro forma pricing or no pricing information; the lack of pricing information is likely due to the quick timeline of the RFI and circumstances that would make all RFI responses publicly available information.

Information from those respondents that developed pricing models will inform pricing parameters for MO-HITECH's financial modeling efforts. However, it will likely be difficult to draw firm conclusions based on the limited information provided. A future RFP will need to define specific prototype details to obtain reasonable and comparable pricing estimates. Financial models will be further refined based on information obtained through a future RFP.

5.3 Technical Architecture

The proposed technical architecture was developed with the goal of creating and offering statewide HIE services that facilitate providers' abilities to satisfy meaningful use requirements and provide significant patient value. It is believed that the Statewide HIO must offer value to Qualified Organizations, clinicians, and patients – and ultimately improve patient outcomes – to be adopted among health care providers and public health officials. The technical architecture was developed based on the principles and patterns described in Sections 5.2 and 5.3 of the MO-HITECH Strategic Plan, respectively.

The Statewide HIO will contract for the statewide HIE network using service oriented architecture (SOA) principles and will support web service components to the greatest extent possible. The proposed network architecture is composed of Qualified Organizations that communicate using national HIE standards and protocols (e.g. the NHIN messaging platform) as such standards and protocols become available and are adopted by the Statewide HIO. The Statewide HIO will serve as the nexus of these Qualified Organizations, capable of routing messages among all providers and ultimately to consumers, and orchestrating messages according to business rules needed to deliver meaningful use functions. This architectural approach was confirmed by the RFI process and responses described above. In support of the MO-HITECH principle – "*no provider left behind*" – articulated in the Strategic Plan, the Statewide HIO will facilitate connectivity to the Statewide HIO for providers unaffiliated with a Qualified Organization and subsequently lacking an "onramp" to the statewide HIE network.

As summarized above, there will be two types of connectivity for the Statewide HIO:

Qualified Organizations will connect to the Statewide HIO using uniform, standard protocols as required by HHS from the NHIN or other widely accepted messaging platform(s) where HHS has not designated standards; where there are not existing standards the Statewide HIO will establish standards and protocols. The figure below illustrates the implementation of the "Missouri Protocol Bus," providing the service registry for statewide HIE services. Other Qualified Organizations would query the registry to find endpoint services when making requests, and could also be service providers with entries in the registry. Note that the State Government is constructing an enterprise service bus (ESB) to enable HIE with State services. An important function of the Statewide HIO implementation will involve working closely with the State Government to connect its ESB to the statewide HIE network. Translation of formats and other mediation of service requests are also under consideration.

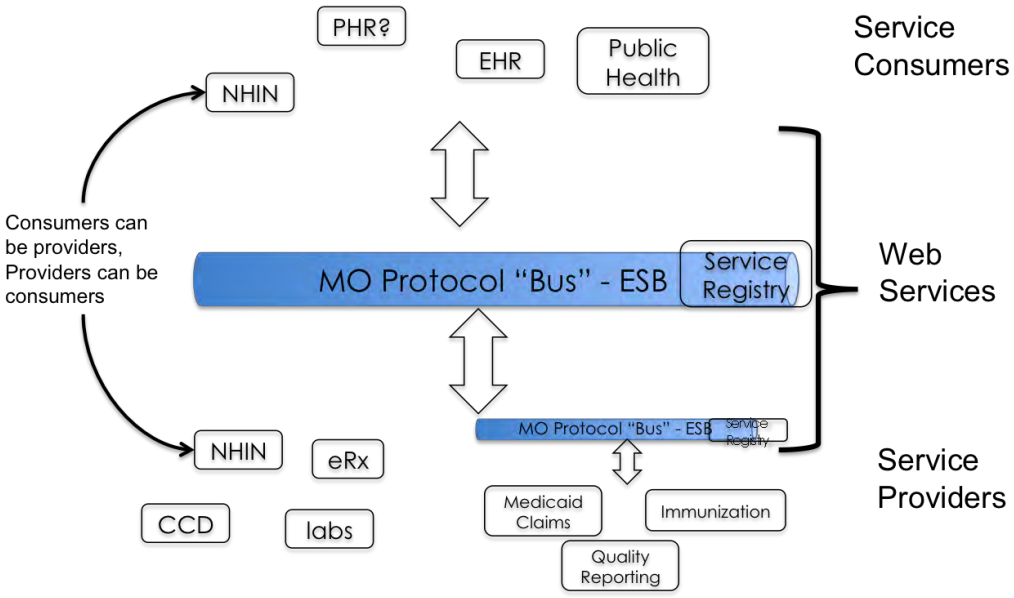

Figure 11. Missouri Protocol Bus

Providers without access to or unaffiliated with a Qualified Organization connected to the Statewide HIO may connect directly to the Statewide HIO. This is the function that current implementations of HIE often provide as depicted in the figure below: connecting various systems from providers and other resources and bridging to a standard web services interface to integrate into the larger statewide and national health information network. Note that the development of statewide HIE could obviate the need for this service if other Qualified Organizations connect all providers. The purpose of this capability is explicitly *not* to supplant other Qualified Organizations but rather is based on the assumption that there will not be other options in the early stages of statewide HIE to offer connectivity to all providers and make available to every provider at least one path to satisfying meaningful use criteria and thus qualify for reimbursement.

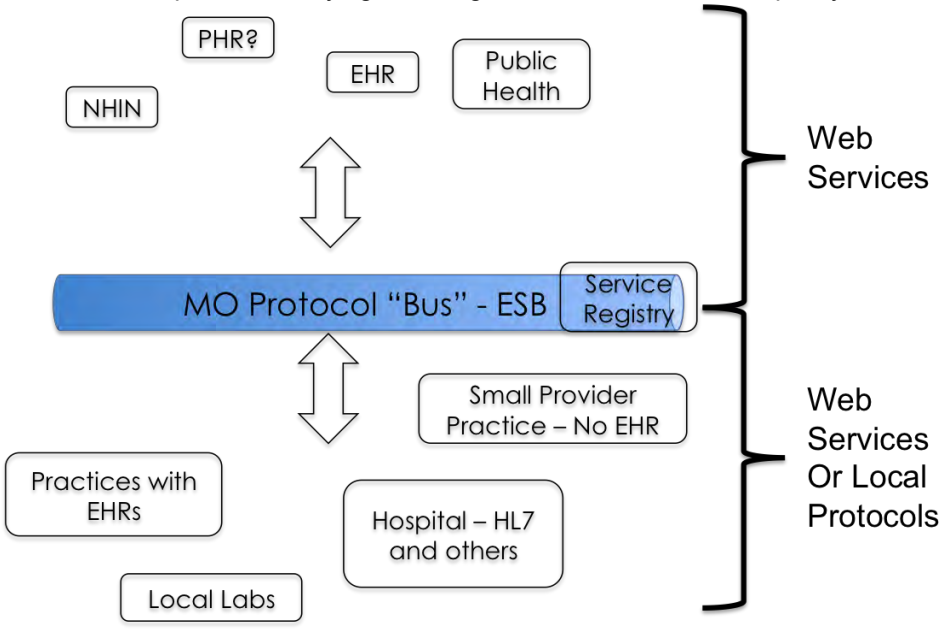

Figure 12. Direct Connectivity to the Statewide HIO

5.4 Core Infrastructure

Certain support infrastructure services are required to implement the proposed technical architecture and the Statewide HIO will be responsible for assuring an appropriate implementation is achieved. Core infrastructure services are intended to provide essential capabilities to support health care transactions and support providers to satisfy meaningful use requirements related to HIE.

The components envisioned to compose the core infrastructure as currently proposed are detailed below; implementation and rollout of these services are discussed in Section 5.6 (Technology Deployment).

Registries

- **Patient Registry***:* The proposed design calls for a federated patient registry, linking together registries from the various Qualified Organizations on the statewide HIE network and also providing the capacity to serve as a registry for providers unaffiliated with a Qualified Organization. Functionally, this is often referred to as a master patient index (MPI) or record locator service (RLS), enabling matching and location of patient information anywhere in the statewide HIE network.

- **Provider Registry**: The proposed design calls for a federated provider registry, linking together provider registries from the various Qualified Organizations on the statewide HIE network and offering a registry where one does not exist. Similar to a patient registry service, the provider registry will support search, create, update, and archive functions.

- **Organization Registry**: The proposed design calls for a federated organization registry, linking together organizational registries from the various Qualified Organizations on the network. The provider registry and the organization registry must be cross-linked so that affiliations between providers and organizations are represented. The organization registry should also be able to provide a unique identifier capturing the organizational information including any systems and system meta-data that are used to connect to the network.

- **Consent Registry**: Based on the access consent policy that the Statewide HIO ultimately determines to be appropriate (e.g. global access with affirmative patient consent), patient consent policies will need to be linked and accessible. These consent policies should provide a consistent source of a consumer‘s preferences, thereby enabling patient engagement and provider access to clinical information. The consent registry should be able to connect to existing consent registries and provide a consent registry if one is not available. This registry will also simplify interstate HIE by supporting interstate HIO representations, enabling HIOs to interpret policies to determine appropriate disclosure.

- **Web Services Registry (UDDI)***:* The Statewide HIO will provide the registry containing endpoints for statewide Web services. The NHIN-compatible registry will be able to point to other HIO registries or serve as the main lookup vehicle for any endpoints and Qualified Organizations across the network.

- **Web Services Endpoints and Messaging (Service Bus)**: The Statewide HIO will implement web services, enabling service consumers to connect to endpoints in the services registry (described above), and also manage administration such as registering service providers and service consumers. Additionally, the service bus should be able to reliably store, forward, aggregate, and pull from any service endpoints that are dynamically available or contained within the services registry.

Secure Messaging

- **Integration and Message Transformation**: The Statewide HIO will provide orchestration/integration to enable simpler, integrated responses to complex requests from service consumers. Message transformation in and out of various formats will also be provided, for example from X12 EDI formats to Web services/SOAP formats. As other communication or object access models arise (such as REST-ful web services), the Statewide HIO will consider implementing these to connect and utilize any emerging HIE standards or protocols.

- **Integrated Healthcare Enterprise (IHE) Profile Support (PIX Manager, XDS Registry, XDS Repository, etc.)**: The Statewide HIO will support the NHIN messaging platform, requiring support for various IHE profiles, including the use of PIX/PDQ for patient identification and the use of XDS profiles for document indexing and retrieval.

Administration & Management

- **Terminology Management (HITSP C83 / C80 Support)**: The Statewide HIO will address the challenge of semantic interoperability between disparate systems to create a longitudinal view of patient health information; terminology management will be considered if resources permit to enable uniform transport of continuity of care documents (CCDs). Ultimately the Statewide HIO will implement HIE compliant with the terminology standards as issued by HHS/ONC or other federally-supported specifications.

- **System Administration**: The Statewide HIO will support standard administration services such as user provisioning, security and access control, and services registry administration, among others.

Privacy & Security

- **Role Based Access and Management**: The Statewide HIO will support role based access and management as required by the Statewide HIO‘s privacy and security policies and as described in the NHIN messaging platform for security and authorization.

- **Privacy**: The Statewide HIO will support the privacy of protected health information in accordance with HIPAA, Missouri state law, and applicable Statewide HIO policies. The Statewide HIO will enable and enforce patient privacy utilizing industry accepted system controls and processes.

- **Security**: Authentication, authorization, access, and audit will be central to the protection and privacy of personal health information. The Statewide HIO will support messaging, system, and network security protocols; will consider supporting two-factor authentication; and will support immutability of audit entries as it relates to access and disclosure of patient health information.

- **Logging**: The Statewide HIO must log transactions and transaction types including, but not limited to:

    - NHIN / HHS standards

    - IHE auditable events

    - Debugging or event tracing

- **Monitoring**: The Statewide HIO will support internal system monitoring, load balancing, and network monitoring of services availability. The Statewide HIO will prioritize methods to detect unusual clinical, access, or other HIE functional events based on the clinical services (e.g.

specialized rules to detect clinical gaps in care, drug seeking or shopping behavior, or other surveillance type functions based on the transactions traversing the network) and will attempt to implement these methods if resources permit.

Enabling Reporting Services

- **Reporting**: The Statewide HIO will support operational, audit trail, and management reports, including but not limited to:
    - Access metrics
    - Usage metrics
    - Consent adherence
    - Transactions
    - Ad hoc reporting

5.5 Standards and Certifications

The Statewide HIO will be consistent with interoperability standards and certifications requirements adopted by HHS. The Statewide HIO will require, through contracting, that vendors and participants in statewide HIE be compliant with national standards and align with emerging standards as necessary.

The principles articulated below outline Missouri‘s commitment to national standards and certifications:

- **Design for Cross State Border issues**. Missouri borders eight states and has major metropolitan areas on state borders. Every effort must be made to create statewide HIE that functions across state borders to enable effective healthcare for patients and providers in border regions. Missouri will be a part of the NHIN, either through regional deployments as part of NHIN-sponsored projects or through a NHIN gateway provided by the Statewide HIO.

- **Start with National Standards and Minimize Deviation**. The technical infrastructure will comply with national standards unless deviation is necessary to satisfy Missouri-specific legal or regulatory requirements, or if the Statewide HIO and its leadership determines that deviation from national standards is necessary.

- **Use of Open Protocols**. The technical infrastructure and approach will adopt open protocols to maintain interoperability and vendor neutrality.

5.6 Technology Deployment

The Statewide HIO intends to develop a request for proposal (RFP) outlining the technical architecture and desired core infrastructure and services as prioritized for deployment, outlining target dates and milestones for implementation. The selected vendor will contract with the Statewide HIO to deliver the core infrastructure and services as outlined to ensure the Statewide HIO is capable of supporting providers‘ achievement of meaningful use. The Statewide HIO will be committed to supporting providers‘ achievement of meaningful use requirements for Stage 1 and beyond. It is intended that the Statewide HIO‘s initial stage of implementation will include core infrastructure, as defined above, and core services, as defined in Section 6 (Business and Technical Operations). Additional ~~v~~alue-added” services will be prioritized based on the needs of providers in order to meet meaningful use requirements and support a sustainable model for statewide HIE in Missouri.

5.7 Next Steps

Missouri recognizes the need for continuing work to develop and implement the core infrastructure for the statewide HIE network. Moving forward, the Statewide HIO will continue the work of the MO-HITECH Technical Infrastructure Workgroup to:

- Monitor HHS and CMS final rules for reimbursement, standards, and meaningful use and adjust technical implementation plans as necessary
- Design a process to maintain and revise Missouri's technical infrastructure as needed based on federal requirements and other market drivers
- Finalize and prioritize the implementation of core infrastructure requirements
- Create and issue a request for proposal (RFP) for the development of the core infrastructure

Please refer to the Next Steps section in Business and Technical Operations (Section 6.5) for a project plan outlining tasks respective to Technical Infrastructure; the two timelines have been integrated due to their overlap and dependencies.

6. BUSINESS AND TECHNICAL OPERATIONS

6.1 Overview

The State of Missouri and the private sector have launched several collaborative health IT and HIE initiatives to improve health care delivery. MO-HITECH is committed to working with stakeholders to determine how these and other assets may be leveraged for broader HIE objectives. These initiatives are described in detail in the Environmental Scan of the MO-HITECH Strategic Plan.

The Missouri HIE landscape is characterized by local and regional HIE services being developed by regional HIOs; this is advantageous because regional HIOs can more easily take advantage of statewide HIE services and accommodate any changes required to comply with common protocols and standards that will enable interoperability of HIE services throughout Missouri. Further, by distributing the effort Missouri will accelerate adoption of statewide HIE and shorten the time needed to reach the ~~"~~tipping point" where the value of the statewide network increases rapidly and becomes a compelling value proposition to those not yet engaged. Missouri also has significant information assets within state government that are well integrated due to efforts over many years, which will make leveraging these assets much more straightforward.

Missouri will adhere to national standards and intends to participate in the NHIN, providing access to all national services compatible with NHIN protocols and enabling robust border state HIE. Missouri is already working with leadership in its border states and will continue to do so in order to further efforts for interstate HIE by harmonizing policy and technology. Flexibility and adaptability are therefore critical features of the strategy at the system design level and in deployment.

As described in Section 6.2 (Request for Information), Missouri's approach to HIE services has been informed by the information gathered through the RFI. Services are categorized as either:

- Core Services: Services that are required for the successful exchange of health information across the entire state; or
- Value-Added Services: Services that provide value to the participants involved in HIE.

The Statewide HIO's initial stage of implementation is scheduled to begin in the fourth quarter of 2010 and will include core services and core infrastructure as defined in the previous section. Meaningful use

requirements for providers will be a primary driver of strategy for prioritization and deployment of statewide HIE value-added services. Supporting the sustainability of HIE across the entire state will also be a key driver in the prioritization of value-added services.

The services strategy detailed below is based on the CMS Notice of Proposed Rulemaking released on December 30, 2009; Missouri recognizes that the approach will likely require modification upon review of the final rules issued by CMS.

6.2 Core Services

- **Secure Clinical Information Exchange:** The Statewide HIO will enable participating providers to securely exchange key clinical information between their EHR systems (e.g. accept and route continuity of care documents (CCDs) and/or continuity of care payloads between connected providers).

- **Web Viewers for Providers Without EHRs:** In support of the MO-HITECH principle – ~~"~~*no provider left behind*" – articulated in the Strategic Plan, the Statewide HIO will provide an alternative EHR-viewing capability for all clinical services to providers without EHRs, requiring only standard web browsers. This ~~"~~EHR-light" functionality may be provided through the contract for core infrastructure or services or, alternatively, may be provided by leveraging Medicaid's CyberAccess platform.

- **Access to Medicaid Data:** The Statewide HIO will make Missouri's Medicaid data available to participants over the network.

6.3 Value-Added Services

As described above, value-added services that support meaningful use requirements or support sustainability of HIE across the entire state will be prioritized. Below is a brief description of clinical service requirements; services required to satisfy Stage 1 meaningful use requirements and are foundational for future HIE services. The order in which the Statewide HIO will implement the services described below was a main point of discussion among the MO-HITECH Workgroups and will be continuously evaluated by the Statewide HIO and its advisors.

Services Required for Stage 1 Meaningful Use

The following services are required for Stage 1 meaningful use; the descriptions below are based on the December 2009 Notice of Proposed Rulemaking (NPRM) for Meaningful Use.

- **Laboratory Ordering and Results Delivery:** The Statewide HIO may facilitate the push and pull of laboratory orders and results to Missouri providers for integration into EHRs and routing to provider systems, requiring integration with labs, lab networks, or other sources of leveraged laboratory connections. Currently, stage 1 Meaningful use only requires push transactions; hence push transactions will be prioritized.

- **Electronic Prescribing (E-Prescribing):** The Statewide HIO may serve as a single point of connectivity to multiple sources of medication history, formulary, and eligibility, and respond to queries from providers for such information, as well as provide a statewide interface for e-prescribing transactions for providers with EHRs. Such connectivity might be accomplished through connectivity to Surescripts or other e-prescribing networks, as well as connectivity to the Missouri State enterprise service bus for access to information in State systems.

- **Eligibility and Authorization Unification:** The Statewide HIO may serve as a single point of connectivity to all payers in Missouri through a multi-payer portal or other means to enable day-certain eligibility transactions, including authorization, between providers and payers within their

respective practice areas. The Statewide HIO may route eligibility requests from provider EHRs and/or practice management systems to appropriate payers and return results to provider EHRs and/or practice management systems, accounting, and/or billing subprograms.

Services Critical to the Missouri HIT Assistance Center

As a recipient of funding under the Regional Center Cooperative Agreement Program, the Missouri HIT Assistance Center will provide direct onsite technical assistance to providers. Among the provider-specific milestones for the Missouri HIT Assistance Center is the documentation of ~~"g~~go-live" status on a certified EHR with active quality reporting and e-prescribing.[7] The Statewide HIO will coordinate closely with the Missouri HIT Assistance Center to ensure that its evaluation of quality reporting and e-prescribing services for purposes of implementation are considered in the context of the Regional Center Program.

Additional Services

Missouri is initially focused on the immediate needs of providers to satisfy meaningful use requirements, enable clinical services, and support sustainability of statewide HIE; however, Missouri is committed to a larger transformative vision for its health care system, moving toward patient-centered models supportive of robust coordinated care. The services described below have been identified by Missouri stakeholders in the Technical Infrastructure and Business & Technical Operations Workgroups and were included for purposes of information gathering in the RFI.

- Bidirectional interface to personal health records (PHRs) (e.g. Google Health, Microsoft HealthVault), specifically with the intention to obtain specific patient medication history for medications personally obtained including those classified by the Food and Drug Administration (FDA) as food and herbals.

- Radiological image exchange, including management of storage and caching of images, DICOM support, and ~~"v~~viewers" for clinician display.

- Public health reporting

- Population-based health management and reporting, including psuedonimization, support for ~~"d~~data marts" and reporting and display capabilities.

- End-user integration with multiple systems for display of clinical information.

- Integration with provider workflow, including messaging, rules and alerts.

Other services that the Statewide HIO may ultimately explore include, but are not limited to:

- Clinical decision support

- Predictive analysis

- Integration with home monitoring (including but not limited to device integration); and

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[7] Office of the National Coordinator for Health Information Technology, Department of Health and Human Services. American Recovery and Reinvestment Act of 2009, Title XIII – Health Information Technology, Subtitle B – Incentives for the Use of Health Information Technology, Section 3012, HEalth Information Technology Implementation Assistance. Health Information Technology Extension Program: Regional Centers Cooperative Agreement Program. Funding Opportunity Announcement and Grant Application Instructions.

- Other capabilities supporting advanced clinical care models.

6.4 Leveraging HIE Capacity

While there is some notion of prioritization in the order of the services above based on Workgroup discussions and information gathered through the RFI, a final prioritization for the plan cannot be completed until the proposed meaningful use definitions are finalized by CMS. The general strategy is to prioritize statewide HIE services that support proposed 2011 meaningful use requirements, and to ensure that core infrastructure services are aligned to support the prioritized clinical services.

Leveraging State and Regional HIE Capacity

Missouri's strategy calls for the creation of a Statewide HIO, as well as the leverage and support of existing and new regional HIOs. While most HIE efforts in Missouri are nascent, there have been substantial investments already in innovative approaches, and it is desired to integrate these efforts and enable them to continue to develop.

The Statewide HIO will also have as a primary goal the integration of state government health information assets into statewide HIE. The state government has substantial integration capabilities within its systems and is currently developing a Web services architecture with an ESB. Working with state government to enable interoperability with the state government ESB will provide tremendous opportunities to leverage state government capabilities through statewide HIE.

Leveraging Statewide Shared Services and Directories

The section on Technical Infrastructure describes in detail the strategy for statewide directories and the approach to interoperability that makes all shared services available statewide. The Statewide HIO will adhere to this approach and regional HIOs within the state will be assisted and encouraged to integrate via the protocols and procedures specified as part of the technical architecture. Representatives from state government are actively involved in the MO-HITECH initiative so that the state's information assets will comply with the specified guidance and therefore be integrated into the Statewide HIO.

6.5 Next Steps

As described in the Technical Infrastructure Section above, Missouri recognizes that the work to develop and implement Missouri's core and value-added services does not end with the submission of the Operational Plan. Moving forward, the Statewide HIO will continue the work of the MO-HITECH Business and Technical Operations Workgroup to:

- Monitor HHS and CMS final rules for reimbursement, standards, and meaningful use and adjust technical implementation plans as necessary
- Finalize and prioritize core and value-added services for implementation
- Create and issue a request for proposal (RFP) for development and implementation of core and value-added services
- Partner with Missouri state government to ensure integration with the state government ESB and Medicaid services
- Design a process for technical implementation, including staffing requirements to support the implementation and operations of the statewide HIE network

A project plan outlining tasks and activities required to meeting Missouri's short and long term goals relative to the technical infrastructure and services of the Statewide HIO is below.

Task	Activities	Start	End
Short Term June – December 2010			
Request for Proposal (RFP) for core infrastructure and core services	• Write and Distribute RFP, • Vendor Q&A • Review and choose	7/1/10	9/15/10
Coordinate with Medicaid, state services	• Develop plan for integration, • Work with MMIS, chosen vendor to integrate	7/1/10	12/31/10
Detailed Design	• Develop requirements, • Develop technical architecture	7/1/10	8/15/10
Vendor Contract	• Draft contract terms, • Work with vendors, • Execute contract	8/1/10	9/30/10
Implementation Plan	• Develop plan based on requirements. • Develop timeline, milestones • Develop testing plan	8/1/10	9/30/10
Identify Qualified Organization Pilot Sites	• Finalize process and criteria • Request Letter of Intent • Select initial pilot sites	9/1/10	9/30/10
1st phase Implementation of Core Infrastructure and Core Services	• Manage vendor partnership	10/1/10	1/31/11
Long Term 2011 – 2015			
Pilot Site Connectivity	• Implement pilot sites	2/1/11	4/30/11
Develop Interstate, NHIN Plan	• Develop state, federal partnerships	2/28/11	4/30/11
Value-Added Services Planning	• Design structure, decision making • Address identification, prioritization	2/28/11	11/30/11
Additional Qualified Organization Connectivity	• Ongoing qualification of Qualified Organizations • Manage vendor partnership	5/1/11	12/31/15
Implement Value-Added Services Phases	• Orchestration, format translation, terminology services, device integration, other new core services	1/1/12	12/31/15

7. LEGAL AND POLICY

7.1 Overview

MO-HITECH is committed to establishing comprehensive privacy and security policies that protect privacy, strengthen security, and support Missourians' ability to have greater control of and access to their personal health information through the Statewide HIO. The Statewide HIO must provide statewide policy guidance addressing privacy and security needs for interoperable HIE among its participants, including: consent, authorization, authentication, access, audit, and breach.

The MO-HITECH Legal/Policy Workgroup has developed a recommended privacy and security policy framework in the context of clinical information exchange, with the goal of enabling provider access to clinically relevant patient health information at the point of care. These recommendations are summarized below.

7.2 Consent

The MO-HITECH Legal and Policy Workgroup considered to what extent, and how, consumers should have control of their personal health information through Missouri's statewide HIE network. The Workgroup considered two popular models for consumer consent to exchange personal health information through a regional or statewide HIO; these models are commonly referred to as opt-in and opt-out.

- Opt-in: Typically requires affirmative authorization from the consumer, often through signing a standardized consent form, before a consumer's health information may be exchanged through the network.

- Opt-out: Typically requires that the consumer is given notice – through mailings, brochures, posted notices, or other means - and allows a consumer's health information to be exchanged through the network unless and until the consumer formally requests that it not be.[8]

The choice between opt-in and opt-out is one of multiple decisions when constructing a consumer consent policy for statewide HIE. Other features and policy questions include:

- the nature and breadth of consumer outreach and education efforts related to the consent decision;

- the durability and revocability of consumer consent;

- the ability to "break the glass" to obtain health information in emergency situations when a consumer has not had the opportunity to grant or deny consent;

- the desire to ensure compatibility and interoperability across state lines;

- whether and to what extent consumers may control what providers are allowed to share and/or access their information;

- whether and to what extent consumers may exclude certain types of health information;

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[8] An opt-out model is not the same as a "no consent" model. Under a "no consent" model, consumers cannot opt-out and their health information is automatically included in an exchange without prior notice. The Indiana Health Information Exchange (IHIE) utilizes a "no-consent" model. It should be noted that IHIE does not include certain sensitive health information that requires patient consent for disclosure by law (e.g. information from federally-assisted substance abuse treatment programs covered by the federal Confidentiality of Alcohol and Drug Abuse Patient Records regulations at 42 CFR Part 2).

- whether the exchange should limit, exclude or otherwise afford special treatment for categories of specially protected health information, such as HIV, mental health and abortion services;

- the extent of security, enforcement, and remedies in place;

- and the effect and requirements for provider workflow.

The purpose or use of exchanging personal health information is another factor influencing consent policies. Consumers often have different levels of comfort with information exchanged among providers for the purpose of treatment, when compared to exchange with other parties and uses. In developing its recommended privacy policies, the Workgroup started its analysis with an examination of the exchange of personal health information between providers and only for purposes of treatment; the Workgroup operated under the assumption that policies and protections will be in place to ensure that only authorized providers who have a treatment relationship with the consumer will be able to access information within the exchange. The Workgroup recognizes that there are other potential non-clinical uses (e.g. research) of health information; these uses will be evaluated by the Statewide HIO and legal counsel as described in the Next Steps section.

Another key consideration in developing consent policies is the desire to create compatibility with other exchange efforts across state lines. This is particularly important in Missouri, where major regional health care markets cross state lines. Some have called for a single set of national standards related to consent policies. While various national and federal efforts are exploring legal and policy issues associated with HIE, including the Health Information Security and Privacy Collaborative, variation in state law requirements has, to date, prevented a single national solution. MO-HITECH continues to monitor these efforts, but has decided to move forward to develop an approach and consent framework in the context of Missouri state law. An important part of this work requires understanding the policies of existing Missouri HIE efforts and its eight border states; please see Appendix L for an overview of what is known about HIE and border states' consent policies.

Statutorily Protected Health Information

Missouri state law provides additional protections for sensitive health information summarized in the figure below. It is critical that the implications of state law be understood when developing a patient consent framework because of the requirements that patients provide affirmative consent or be notified when certain types of information are shared. Missouri state law requires affirmative patient consent to share genetic tests, and abortion records; Missouri state law is less clear on HIV information and legal counsel analysis indicates that consent is sometimes required to share HIV information. These requirements have important implications for what information may be included in an exchange depending on whether an opt-in or opt-out model is employed.

Federal law requires affirmative patient consent to share drug and substance abuse information. Federal regulations require that for drug and alcohol records the written consent include the "specific name or general designation of the program or person permitted to make the disclosure."[9] This would require a separate consent for each provider that is authorized to disclose information to the HIE. This regulation also requires that the name or title of the organization to which disclosure is being made be included in the consent.[10] Given that a patient cannot possibly anticipate all of his or her future providers, this regulation becomes quite difficult and burdensome to implement.

[9] 42 CFR 2.31(a)(1)
[10] 42 CFR 2.31(a)(2)

Figure 13. Sensitive Health Information & Feasibility Relative to Consent Models

Type of Information	Authorization Required for Treatment Purposes?	Feasibility			
		Opt-In	Opt-Out	Technologically	Clinically
Genetic Information[11]	Yes	Yes	No	Only if segregation of discrete data is feasible.	Yes
Abortion Records	Yes	Yes	No	Only if segregation of discrete data is feasible.	Yes
Drug and Substance Abuse	Yes (under Federal law)	Yes (but only with separate authorization)	No	Only if segregation of discrete data is feasible.	Yes
Head Injury Records	No	Yes	Yes		
Mental Health Records	No	Yes	Yes	No – Segregation of discrete diagnosis may be feasible but also includes Rx information.	No
HIV	Sometimes[12]	Yes	Probably Not[13]	No – HIV information is comprehensively included throughout all patient medical information.	No

Considerations Related to an Opt-in Versus Opt-out Consent Model

The choice between opt-in and opt-out is informed by multiple considerations, outlined in greater detail in the table below. In Missouri, the greatest differentiator among these considerations is state law. While it is unclear whether authorization is required to share personal health information under state law in Missouri, authorization is clearly required for certain types of specially protected health information (also referred to as sensitive health information). Thus, Missouri state law requires either that a consumer opt-in for purposes of statewide HIE, or that certain specially protected health information be excluded for purposes of exchange.

Considerations	Opt-in Implications	Opt-Out Implications
Consumer Trust Statewide HIE represents a paradigm shift in the way health information is shared: from a ―one-to-one" exchange in which consumers connect points of care, to a ―many-to-many" in which information may be exchanged without consumers' active engagement. To engender public support for this effort and to ensure individual consumers' interests are protected,	• Depends on deployment approach. • Some argue act of consumer signing consent increases likelihood that consent is meaningful and	• Depends on deployment approach.

[11] According to Missouri state law, genetic information includes the results of a genetic test, but not family history, the results of routine physical measurements, or the results of chemical, blood, or urine analysis. Recently enacted federal law, GINA, includes family history as protected information, but the Act is directed to restrictions on the use of such information by employers and insurers and would be addressed by any policy regarding access to the information available through the Statewide HIO by the respective groups.

[12] Information related to a patient's HIV status may be disclosed to providers who have a ―need to know" for the purpose of providing direct patient care to the patient; however, a treatment situation where a health care provider does not need to know the patient's HIV status in order to provide direct patient care is foreseeable.

[13] Ibid.

Considerations	Opt-in Implications	Opt-Out Implications
consumer trust is paramount.	knowing.	
State and Federal Legal Requirements Federal law under HIPAA does not require patient consent to exchange personal health information for the purpose of treatment, payment or healthcare operations.[14] Case law in Missouri is ambiguous as to whether consent is required for release of personal health information generally. However, state statutes require authorization to exchange certain types of sensitive health information, including genetic information, abortion services, mental health and some substance abuse treatment services. It is unclear whether authorization is required for the exchange of HIV tests and services for treatment purposes in all contexts.	• Provides maximum legal protection by providing a record of patient permission to exchange personal health information. • Required to share sensitive health information in Missouri.	• Does not meet state legal requirements for sharing information related to genetic information, abortion, mental health and substance abuse services. • Unclear whether it meets state legal requirements for exchange of HIV information.
Clinical Value of the Information To have value, the statewide health information exchange must include information necessary to provide effective treatment. Without robust medical data, doctors will not participate and the exchange will not be sustainable.	• Allows maximum information sharing under current state law.	• Requires exclusion of some types of sensitive health information under current state law. • May result in a ~~"t~~hin" system limited to data automatically eligible for exchange (e.g. lab results, summary record information)
Technical Feasibility and Cost While technology solutions exist to accommodate a wide range of consent models and features, in general, the cost and technical complexity increase with requirements to exclude certain types of data and/or providers, particularly if the policy calls for such sorting at the consumer level.	• Technology models exist for both options.	• Technology models exist for both options; the need to exclude certain types of sensitive health information could increase costs.
Administrative Burden and Implementation Cost The deployment of consent features require varying degrees of involvement, burden and cost from providers and other HIE participants.	• Requires educational strategies by HIO and providers. • Likely to be bundled with notice and consent processes currently used for health information.[15]	• Eliminates need to gather patient consent. • Efforts required to ensure consumers are aware of exchange and have opportunity to opt-out.[16] • Providers may still want

[14] HIEs that would like to include information from federally-assisted alcohol and substance abuse centers, for instance, must obtain patient consent to exchange such information or risk being found in violation of federal law. *See* 42 CFR Part 2.
[15] Micky Tripathi, David Delano, Barbara Lund and Lynda Rudolph. "~~E~~ngaging Patients for Health Information Exchange." Health Affairs. Volume 28, Number 2. March/April 2009.

Considerations	Opt-in Implications	Opt-Out Implications
		documentation.

Figure 14. Considerations Related to an Opt-in Versus Opt-out Consent Model

Consent Framework

The MO-HITECH Legal/Policy Workgroup has reviewed evidence that both opt-in and opt-out consent models can generate sufficient patient and provider participation to achieve the critical mass necessary for statewide HIE to be effective. Opt-out models typically show slightly higher overall consumer participation rates; while opt-in models require more effort to ensure consumer participation and, if not done correctly, could result in fewer consumers participating in the exchange.[17] A main advantage of an opt-in model is that it permits the inclusion of specially protected personal health information. States pursing an opt-out consent model have typically elected to exclude for purposes of statewide HIE specially protected information under state law; other states are seeking statutory changes that would eliminate or limit state statutory requirements so that they would not apply to specially protected information in the exchange.

The Workgroup recommends that the Statewide HIO utilize an opt-in patient consent framework to enable the inclusion of valuable sensitive health information for purposes of statewide HIE that would otherwise be excluded in an opt-out model. The Workgroup recommends an opt-in patient consent framework with the following characteristics:

- *Durable and revocable* – A patient's decision to participate in statewide HIE will remain intact until he or she decides to revoke his or her consent; consent may be revoked at any time.

- *"Break the glass" access for patients who have not had the opportunity to provide consent* – In an emergency situation, physicians will be able to access a patient's personal health information through the statewide HIE network if the patient has not had the opportunity to ~~o~~pt-in;" if a patient has refused consent, a physician will not be able to access the patient's personal health information through the statewide HIE network in an emergency situation.

- *Global consent for provider access and disclosure* – Patient consent to participate in statewide HIE at a single point of service will enable all qualified treating providers to disclose and access a patient's personal health information. Providers will be required to adhere to statewide privacy and security standards to validate their identity and treatment relationship with patients before they are able to access patients' information.

- *Inclusive of specially protected health information including HIV and mental health information (excluding psychotherapy notes), as explicitly specified in patient consent forms* – Specially protected health information (summarized in the table above) will be included for purposes of statewide HIE. Patients will be notified as part of the consent process that this information will be accessible to their treating providers through the statewide HIE network.

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[16] CareSpark, an HIE that spans areas of both Tennessee and Virginia serves as a case in point. Because state laws in Tennessee and Virginia do not require express consent from patients to share general clinical information electronically for treatment purposes or for other purposes expressly permitted under law, CareSpark relies on an opt-out model. However, CareSpark requires that health care providers educate consumers about CareSpark and how consumers' information is exchanged through the HIE. To facilitate providers' education of consumers, CareSpark trains provider organizations on the opt-out process and supplies them with written educational materials. Other HIEs that rely on opt-out models (e.g. the Nebraska Health Information Initiative and Maine's HealthInfoNet) also allow consumers to opt-out online, and provide significant amounts of educational content on their websites.

[17] Melissa Goldstein and Alison Rein. ~~C~~onsumer Consent Options for Electronic Heatlh Information Exchange: Policy Considerations and Analysis." Prepared for the Office of the National Coordinator for Health IT. March 23, 2010.

- *Discrete elements of specially protected health information may be excluded for purposes of statewide HIE, including abortion records, alcohol and substance abuse information, and genetic test information* – The Workgroup recommends that the Statewide HIO consider an option for patients to exclude certain health information that carries limited clinical value relative to the level of discomfort likely to result from inclusion of the information in the exchange; that is discrete and easily excised from the clinical information routinely included in the exchange (such as prescriptions and lab test results); and where the technological capability exists to do so.

- *Inclusion of minors' health information* – If a minor's health information is included in the HIE, the minor will be required to opt-in to the HIE upon reaching the age of majority or the minor's health information will no longer be accessible on the HIE.

Patient and provider participation in HIE are necessary to facilitate better care delivery and advance other societal goals (e.g., improved public health), as well as to ensure the viability of HIE. Adoption of the appropriate patient consent model, coupled with responsible policies clearly explaining: the types of information included in the exchange; the nature and number of entities granted access to patient health information; the purposes for which the information can be used; the durability and revocability of patient consent; and the extent of security, enforcement, and remedies in place, will help build trust in Missouri's statewide HIE network and improve patient care.

Minors

The Legal and Policy Workgroup recommends that the HIE include health information from patients who are minors. In general, under Missouri state law, no medical treatment may be provided to a minor[18] without consent from the minor's guardian, except in emergencies.[19] It seems reasonable to conclude that the minor's health information can be included in the HIE only with the consent of the guardian. Specific statutes in Missouri that allow the minor to make particular health decisions without consent and that prohibit providers from disclosing certain information to the minor's parent complicate the situation, however.

Under Missouri law, a minor may consent to medical or surgical treatment for himself or herself in the case of pregnancy (excluding abortions), venereal disease, and drug or substance abuse. While not explicitly required by law, it follows, as represented below, that information related to services for which a minor consented to on his or her own may be disclosed to the HIE using the same consent policies as are used for adults who have the capacity to consent for treatment.

Missouri law further provides that if a minor patient consents for himself or herself for the above listed purposes, the provider *may* disclose information about the medical treatment to the patient's guardian only if the patient is actually pregnant, afflicted with venereal disease, or suffering from drug or substance abuse. In instances where a minor has consented for such medical treatment without the parent's involvement and the minor is not pregnant, not afflicted with venereal disease, or not suffering from drug or substance abuse, the provider may not disclose any information related to such medical treatment to the parent without the minor's consent. The policies of the HIE would have to account for this particular restriction regarding health information for minors.

Type of Minor Health Information	Minor Patient Authorization Required?

[18] A ~~m~~minor" is any person under eighteen years of age.
[19] A minor may also consent for his or her own medical treatment if the minor is lawfully married or is the legal custodian of a child.

Negative pregnancy, VD, or drug test for which minor consented (no guardian consent)	Yes
Negative pregnancy, VD, or drug test for which guardian consented	No
Positive pregnancy, VD, or drug test and all related treatment information	No*
All other health information	No

*Note: a provider is not required to disclose this information to a parent but may disclose such information without breaching the duty of confidentiality.

While the Workgroup has determined that is important to include minor health information in the HIE, the foregoing restriction has important implications for what health information of a minor may be included in the HIE, without obtaining consent from the minor, depending on the technological feasibility of excluding certain types of information from the HIE.

7.3 Authorization, Authentication, Access, and Audit

The Statewide HIO must establish policy guidance relative to authorization, authentication, access, and audit (the Four As) within the statewide HIE network. The Four As are critical to facilitating trust among participants in the statewide HIE network that do not have direct relationships or contractual agreements at the individual organization level. Through adherence to a common set of policies and rules, participants in the statewide HIE network may feel confident about the security and integrity of the information they send and receive through the HIE network.

The Statewide HIO will adopt and comply with established national standards to the extent they exist and are applicable to the Missouri statewide HIE network. The Statewide HIO will continue to evolve its privacy and security policies to ensure that the statewide HIE network affords maximum protection to its participants and the information that flows through the network.

Authorization

Authorization is the process used to determine whether a particular individual has the right to access information through a specific network – the Missouri statewide HIE network. Authorization typically leverages role-based access standards that take into account an individual‘s job function (e.g. treating physician, office administrator) and the information required for his or her role. Authorization policies establish minimum requirements for Qualified Organizations and providers authorizing individuals to access information through the statewide HIE network.

The Statewide HIO should establish authorization policies for verifying the identity of all individuals accessing patient health information through the network. The ability of authorized users to access patient health information through the network should be based on a minimum set of role-based access standards that apply to all participants. The Statewide HIO‘s authorization policy should, at a minimum, include the following:

- A process for verifying the identity and credentials of individuals seeking authorization to access/exchange health information; and
- A process for providing individuals seeking authorization the information and mechanisms to be authorized when accessing/exchanging health information upon approval.

Authentication

Authentication is the process for verifying that an individual who has been authorized and is requesting access to information through the statewide HIE network is in fact who he or she claims to be. Authentication policies are an important technical security safeguard used to protect patient health information from unauthorized access; the policies establish minimum requirements that participants in the statewide HIE network must follow prior to enabling access to an ~~-a~~uthenticated" individual through the statewide HIE network.

The Statewide HIO should adopt and comply with national policies that require a minimum level of authentication for verifying the identity of all individuals accessing patients' health information through the network. In establishing the appropriate authentication level, the policy should take into account:

- Technical considerations
- Operational considerations & barriers to adoption
- Costs

From the authorized user's perspective, the authentication process should be the same regardless of which Qualified Organization's health information is being accessed.

Access

Access policies establish minimum behavioral controls that the Statewide HIO should implement to ensure that access to patient health information is only granted for purposes consistent with a patient's consent and with any role-based access standards for which individual users have been authorized.

All Qualified Organizations participating in the Statewide HIO should be required to follow:

- Training requirements for educating authorized users about the policies and procedures for accessing/exchanging patients' health information through the statewide HIE network that meet or exceed the Statewide HIO's basic requirements;
- Common sanction policies to address policy or procedural violations related to access to or the exchange of patient health information through the statewide HIE network; and
- Standard policies related to user names and passwords, failed-access attempts, periods of inactivity, and other activities to be identified by the Statewide HIO.

Audit

Audits are oversight tools for recording and examining access to information (e.g., who accessed what data and when) and are necessary for verifying compliance with access controls developed to prevent/limit inappropriate access to information. Audit policies establish minimum requirements that HIE participants must follow when logging and auditing access to health information through Missouri's statewide HIE network.

All Qualified Organizations participating in the Statewide HIO should be required to meet or exceed the Statewide HIO's minimum standards for routine auditing of individuals' access to patient health information through the network. Minimum standards should address:

- What activity and information must be logged
- How long logs must be retained

- Frequency of audits and who must conduct them
- Minimum sample size for audits
- Public availability of audit results (e.g. Will results be made available to consumers/public and, if so, how?)
- Minimum security of audit logs (e.g. Immutable)

Audit policies should be sensitive to limited resources of smaller HIE participants, and may be made scalable (e.g. larger participants expected to implement more intensive activities than smaller participants) if appropriate.

7.4 Next Steps

Statewide HIE is an emerging field and as the Statewide HIO moves forward, it will need to retain legal counsel familiar with federal and Missouri state law to provide continuous advice and to develop policies as needed. Most immediately, the Statewide HIO, with the assistance of legal counsel, will need to prepare and draft a comprehensive suite of security and privacy policies governing the exchange of health information through the statewide HIE network, including the development of a standard patient consent form and patient and provider participation and education materials. These policies will, at a minimum, address consent, authorization, authentication, access, audit, breach, and patient engagement.

- In addition, following the submission of the Operational Plan, the Statewide HIO will need to:
- Prepare and draft a compliance and enforcement policy for the Statewide HIO for instances of breach of rules and/or standards. These policies should include processes directed at both providers and consumers related to notification of breach and authorized and unauthorized uses and disclosures of health information. These policies should describe how the Statewide HIO will respond to any breach of security or confidentiality.
- Address how the Statewide HIO should treat the exchange of a minor‘s information.
- Address whether or not discrete elements of specially protected health information should be excluded for purposes of the statewide HIE network, including abortion records, alcohol and substance abuse information, and genetic test information.
- Define and limit the scope of the identified acceptable uses of the statewide HIE network, including the definition of ~~tr~~eatment.”
- Beyond the Workgroup‘s recommendations related to using the statewide HIE network for ~~tr~~eatment” purposes by providers, review the collection of potential uses of the statewide HIE that have been identified by the Workgroup. In considering the potential uses, the Statewide HIO should consider the different legal and policy issues raised by each identified potential use, as well as consumer and provider concerns related to each identified potential use. Included in the HIO‘s legal and policy considerations should also be the type of user that will be authorized access to the HIE for each authorized use, such as payers, providers, consumers, researchers, public health agencies, etc., and the legal and policy considerations related to such user. The collection of potential uses of the statewide HIE identified by the Workgroup for the Statewide HIO‘s consideration includes, but is not limited to, the following: development of personal health records; quality improvement and reporting; quality assurance; the promotion of quality and cost transparency; disease management and care coordination for a patient‘s benefit; research (with both identifiable and de-identified health information); the investigation of complaints; and the

aggregation of public health data for the purpose of preventing or controlling disease, injury or disability.

- Address potential inquires and subpoenas by law enforcement officials such that the Statewide HIO will be in full compliance with the law, while furthering the core functions of the statewide HIE and engendering trust amongst consumers and providers.

- Address the legal and policy considerations related to how Missouri's statewide HIE network will interact with interstate exchanges and enable non-Missouri providers to access or exchange information through the network, including the coordination and monitoring of interstate collaboration efforts.

- Communicate and coordinate patient and provider education and training efforts with trade organizations and the HIT Assistance Center, including training for all covered entities.

- Monitor and update the Statewide HIO's privacy and security parameters to reflect changes in federal and Missouri state law, best practices, meaningful use guidance, technological advances, etc.

It is important to note that many of the areas described above not only require examination of federal and Missouri state law, but also require a rigorous policy analysis as to the costs and benefits of potential outcomes. It is the mission of the Statewide HIO to facilitate statewide HIE among Missouri's providers, and appropriate measures must be in place to ensure compliance with federal and state law, as well as to build provider and patient trust to ensure utilization of the statewide HIE network. Provider and patient engagement and education will be critically important at the outset of the Statewide HIO as changes to current day-to-day health care delivery are implemented. As the Statewide HIO evolves to meet the needs of an increasingly electronic environment, continued dialogue with stakeholders, including providers and patients, should support the development of appropriate privacy and security policies.

A high level timeline depicting the events described above is provided below.

Task	**Activities**	**Start**	**End**
Short Term June – December 2010			
Finalize scope of work for Statewide HIO and counsel	• Draft scope of work	7/1/10	7/30/10
	• Contract with counsel	7/1/10	8/15/10
	• Prioritize work to meet technical implementation timeline	7/15/10	8/30/10
Draft privacy and security policies	• Develop policies and review with counsel from participating Qualified Organizations	8/15/10	12/31/10
Develop standard patient consent form	• Develop draft patient consent form	8/15/10	10/1/10
	• Review with Health Literacy Missouri	10/1/10	10/31/10
	• Review with patient focus groups and revise based on feedback	11/1/10	12/31/10
Develop patient education materials	• Coordinate with Consumer Advisory Council to develop and test patient education materials	11/1/10	Ongoing
Long Term 2011 – 2015			
Continue development of and revise privacy and security policies as national policies emerge			
Address interstate HIE privacy and security issues			
Participate in national development of privacy and security policies and agreements (e.g. interstate compact)			

8. FINANCE

8.1 Overview

The passage of ARRA and the HITECH Act have significantly impacted the HIE financing landscape, creating an opportunity for providers to capture billions of dollars in meaningful use incentives that prioritize connectivity, care coordination, and quality reporting, as well as over $500 million to support state HIE planning and implementation. The state of Missouri has received notice of funding for over $20 million to support the development of statewide HIE and providers' meaningful adoption of EHRs; in addition to the $13.8 million from the State HIE Cooperative Agreement Grant, the Missouri HIT Assistance Center has received approval for $6.8 million and the State Medicaid Agency has received approval for $1.7 million. This up-front capital does not include the Medicaid and Medicare EHR incentives Missouri's providers will be eligible to receive beginning in 2011 or Medicaid administrative funds available to the state with 90 percent Federal Financial Participation (FFP). The table below displays an inventory of federal funding awarded to date as of June 2010.

Program	National	Missouri
State HIE	**56 awards (states & SDEs)**	➢ Department of Social Services - $13,765,040
Regional Extension Center	**60 awards**	➢ University of Missouri – $6,836,335
Workforce	**45 awards**	➢ Full Employment Council (Kansas City)- $5M ➢ Crowder College (Neosho) - $3.6M ➢ Marysville University (St. Louis) - $4.7M
Health Center Networks	**45 awards**	➢ St. Louis Integrated Health Network - $1M ➢ Missouri Primary Care Association - $1M
Medicaid	**NA**	➢ MO HealthNet - $1.7M
Total Funding to Date ~ Approximately $38 M		

Historically, there has not been a viable market to support HIE and emerging regional and state HIOs have struggled to secure such up-front capital and develop recurring revenue necessary to support ongoing operations and connectivity. The HITECH Act is changing the marketplace; in the funding opportunity announcement, ONC writes that:

> *"Medicare and Medicaid meaningful use incentives are anticipated to create demand for products and services that enable HIE among eligible providers….The resulting demand for HIE will likely be met by an increased supply of marketed products and services to enable HIE, resulting in a competitive marketplace for HIE services."*[20]

To date, no single financing strategy for HIE efforts has emerged as the clear path to viability; rather individual HIE efforts must examine and understand the opportunities, constraints, and limitations inherent to various funding sources in the context of their unique markets.

Recognizing the challenges facing Missouri and other states to support sustainable HIE, MO-HITECH convened a collaborative stakeholder workgroup to develop a financing approach and model that addresses Missouri's provider landscape.

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[20] American Recovery and Reinvestment Act of 2009, Title XIII - Health Information Technology, Subtitle B—Incentives for the Use of Health Information Technology, Section 3013, State Grants to Promote Health Information Technology. State Health Information Exchange Cooperative Agreement Program. Office of the National Coordinator for Health Information Technology, Department of Health and Human Services. 2009. p. 9.

8.2 Financial Model Methodology

As described in the MO-HITECH Strategic Plan the Finance Workgroup has been charged with the development of a financing model to estimate the costs of statewide HIE over six years (beginning January 1, 2010). The figure below depicts the methodology and steps that the Workgroup is using to develop the financial model. The process is iterative and involves review and input from many stakeholders, ultimately strengthening the model itself. These steps and their associated outputs are described in greater detail in the text below. It is anticipated that this model will continue to be iterated throughout the sustainability phase of the project which is expected to continue through Q2 2011.

Step 1: HIE Modeling Approach and Key Assumptions	Review HIE modeling approach, key assumptions and drivers with finance workgroup and modeling sub committee. Update key assumptions and drivers as required to customize the model for Missouri.
Step 2: Environment Data Collection	Collect relevant environment data necessary for the calculations of cost and revenue. Data includes: providers, payers, population, border states, existing HIOs, etc.
Step 3: Initial Cost and Revenue Models	Develop initial draft of overall costs and revenue for the state based on environmental data and high-level assumptions.
Step 4: Harmonize Model with Strategic Plan and Operational Planning Activities	Harmonize the assumptions with the strategic and operational plans. Perform additional data collection as required to produce a second draft of the model.
Step 5: Iterate Model with Sustainability Planning Activities	Continue to iterate versions of the model to incorporate sustainability planning activities, assumptions and decisions. This step will ultimately lead to a final version of the model.

Figure 15. Financial Model Methodology

8.3 Financial Model Key Assumptions

As described in the MO-HITECH Strategic Plan, the Finance Workgroup was charged with developing a six year (beginning January, 2010) all-in cost model for statewide HIE in Missouri. At the outset of this process the Workgroup agreed to several assumptions that formed the basis of the model. Among those key assumptions are the key sources and drivers of cost and revenue. The figure below depicts the financial model framework the Workgroup is utilizing.

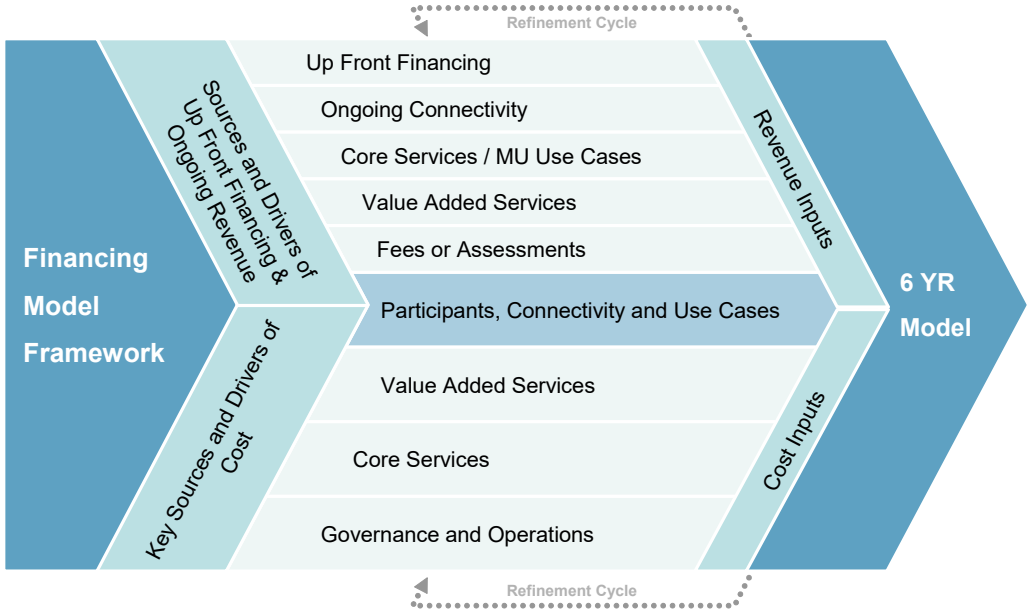


Figure 16. Financial Model Framework

Baseline Assumptions

The baseline assumptions outlined in the Operational Plan are intended to reflect a vision for statewide HIE in Missouri, taking into consideration the unique Missouri provider landscape. The baseline assumptions are outlined below and have been refined during the Operational Planning process.

Key baseline assumptions for Missouri's financing approach to statewide HIE include:

- Governance and operations cost of the Statewide HIO will be accounted for in the model; the governance and operations costs of other HIOs (e.g. regional HIOs or hospitals) will not be included
- The cost of connectivity to the Statewide HIO will likely vary by participant type (e.g. solo provider, critical access hospital, FQHC) and size (e.g. small, medium, large)
- The costs associated with the purchase and implementation of new EHRs or the remediation of existing clinical information systems (CIS), by individual providers or provider organizations, will not be included in the cost of statewide HIE, with the exceptions of:
- Medicaid system implementation or remediation required for statewide HIE; and
- Estimated costs and revenues associated with connectivity to the Statewide HIO through a low-cost EHR-light (intended for providers without access to a local or regional HIO)

The financing approach is inherently flexible and these assumptions have been adjusted to reflect the most recent conclusions of the MO-HITECH collaborative stakeholder process.

8.4 Environment Data Collection

Following the development of key assumptions, the Finance Workgroup endeavored to collect information and data necessary to estimate the costs associated with statewide HIE in Missouri. The categories of

data and respective sources that were contacted to provide information are outlined in the figure below.

Category	Data Sources
Physicians	Missouri Hospital Association Department of Health Missouri State Board of Nursing
Hospitals	Missouri Hospital Association
Federally Qualified Health Centers (FQHCs)	Missouri Primary Care Association
Rural Health Clinics (RHCs)	Missouri Association of Rural Health Clinics
Payers	Payers Department of Insurance
Pharmacies	Surescripts (2009 data) Board of Pharmacy
Labs	Payers Department of Health Labcorp Quest Missouri Hospital Association Department of Health & Senior Services Boyce and Bynum
Radiology Centers	Missouri Hospital Association Payers (credentialing)
Regional HIOs	Regional HIOs
Long Term Care Facilities	Department of Social Services

Figure 17. Environment Data Collection

A summary of information gathered through the environmental data collection is provided below. This summary represents the current best understanding of the Missouri health care landscape based on the information received to date. For example, there are 40 hospital systems in Missouri, representing a total of 94 hospital sites and 1,227 employed in-patient providers. Those areas highlighted in yellow are currently unknown. Additional detail is provided for each category below later in this section.

Provider Organizations

Provider Type	Organizations	Sites				Providers	Non-Phys Prescriber (NP, PA)
		Large	Medium	Small	Total		
Hospital Systems	40	24	21	49	94	1,277*	472
Hospitals	61	6	15	40	61	828*	307
Long Term Care	535	221	142	172	535		
Rural Health Centers	331	1	120	210	331	4,056	1,500
FQHCs	23	6/86	9/70	8/27	23/183	225	85
Provider Offices		35	121	1,612	1,612	8,867	3,290
Labs (excl Hosp & Clinic based)	41						
Pharmacies (Chain)	35				761		
Pharmacies (Independent)	513				513		

Unknown

* Only included employed in-patient providers

Figure 18. Health Care Landscape

Providers

Information was gathered from a claims processing company with a strong presence in Missouri. The information below represents approximately 70% of all Missouri providers and was used to estimate provider office size or billing location across the state. According to this information, a significant number of Missouri's providers (39%) either practice in large offices of over 100 providers or bill to a medical group of over 100 providers. Given the provider landscape in Missouri, it is likely that many of 5,651 providers accounted for in this category are part of a large medical group, but practice in a relatively smaller setting. The next largest number of providers (22%) practice in an office with between one and five providers; this figure is considered to be more representative of physical office location and size.

Office Size	Offices	Providers (all)	Percent of Providers (all)	Average Providers Per Office
1-5	1,757	3,198	22.15%	1.82
6-10	158	1,211	8.39%	7.66
11-20	82	1,161	8.04%	14.16
21-50	62	2,002	13.87%	32.29
51-100	17	1,215	8.42%	71.47
100+	25	5,651	39.14%	226.04
Grand Total	**2,101**	**14,438**	**100.00%**	**6.87**

Figure 19. Provider Landscape

Hospitals and Hospital Systems

The Missouri Hospital Association conducted a survey of its members (155 hospitals total) to assess their level of EHR adoption. The figure below depicts the level of adoption in five categories and the corresponding ONC criteria upon which hospital EHR implementation was assessed:

- No EHR (NO): Reported implementation for 0 of the 24 identified ONC categories
- Partially Implemented (PI): Identified adoption for 1-23 of the identified categories
- Basic Implementation (BI): Identified implementation of the nine select & specific categories as defined by OHITA. These nine categories are a subset of the 24 identified for full implementation.
- Fully Implemented (FI): Identified implementation of 24 ONC defined criteria required for full implementation.

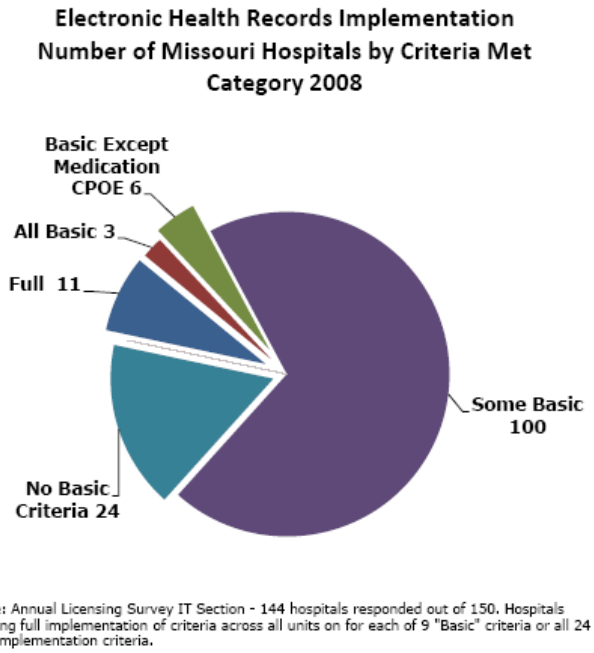


Figure 20. Hospital EHR Implementation & ONC Criteria

The table below depicts hospital adoption status by size. For purposes of this assessment a hospital with 1 – 99 beds is considered small; 100 – 199 beds is considered medium; and 200 or more beds is considered large. According to this information, the majority of Missouri‘s hospitals have at least partially implemented EHRs consistent with ONC‘s criteria described above. Of those hospitals, 11 have fully implemented EHRs and 3 have basically implemented EHRs. Only 18 hospitals reported no implementation.

Hospital size and adoption status will be important factors when determining assumptions relative to hospital HIE connectivity.

All Hospital Adoption Status					
Category	**Total**	**NO**	**PI**	**BI**	**FI**
Small	44	6	35	2	1
Med	36	3	27	1	5
Large	30		25		5
Critical Access	35	9	26		
Total	**145**	**18**	**113**	**3**	**11**

Figure 21. Hospital Adoption Status by Size

Rural Health Clinics

There are 340 rural health clinics in Missouri; as depicted in the table below, the majority of rural health centers are small and medium size practices, and over 1,500 total mid-level providers currently practice in rural health clinics. Less than 10% of rural health clinics have implemented and use EHRs.

RHC			
Size	**Organizations**	**Description**	**Max Connectivity**
Solo	20	Solo Practioners	20%
Small	190	2-9 Providers	30%
Medium	120	10-49 providers	50%
Large	1	50+ providers	100%

Figure 22. Rural Health Clinics

Federally Qualified Health Centers

There are 23 Federally Qualified Health Centers (FQHCs) in Missouri with nearly 180 total sites, including two FQHC ~~l~~look alikes," and representing 300 prescribing professionals. Currently all but one FQHC, 95% of all FQHCs, have adopted and are using an EHR; there is one remaining FQHC that is anticipated to implement an EHR by the end of 2010. There are approximately eight unique EHR systems that have been implemented among the FQHCs.

Size	Organizations	Sites	Descriptions
Small	8	27	Less than 7K patients
Medium	9	70	Less than 21K patients
Large	6	85	More than 21K patients

Figure 23. Federally Qualified Health Centers

Skilled Nursing Facilities (SNFs) & Intermediate Care Facilities (ICFs)

There are 535 long term care (LTC) centers in Missouri. Of those, 172 are considered small and have less than 80 beds; 142 are considered medium and have between 80 and 120 beds; and 221 are considered large and have more than 120 beds. \

Medicaid / Non-Medicaid	Large	Medium	Small	Grand Total
Medicaid	217	134	150	501
Non-Medicaid	4	8	22	34
Grand Total	221	142	172	535

Figure 24. Skilled Nursing Facilities & Intermediate Care Facilities

Pharmacies

There are 1,274 pharmacies in Missouri; 35 chains with 761 pharmacy sites represent 60% of the pharmacies in Missouri and the other 40% of pharmacies are independently owned. According to Surescripts in December 2009, 92% of chain pharmacies (702) and 64% of independent pharmacies (326) were connected to the Surescripts network and capable of receiving electronic scripts.

Labs

The table below depicts the laboratory organizations in Missouri in order of paid occurrences. The three labs with the largest percentage of paid occurrences represent over 60% of all occurrences cumulatively, and the ten labs with the largest percentages of paid occurrences represent nearly 90% of all paid occurrences cumulatively.

	Provider Name	Paid Occurances	Percent	Cumulative Percent
1	QUEST DIAGNOSTICS	248343	36.6%	36.6%
2	LABORATORY CORPORATION OF	88857	13.1%	49.7%
3	BOYCE & BYNUM PATHOLOGY	71978	10.6%	60.3%
4	GAMMA HEALTHCARE INC	59759	8.8%	69.1%
5	STATE PUBLIC HLTH LABORATORY	53727	7.9%	77.0%
6	KNEIBERT CLINIC LABORATORY	23502	3.5%	80.5%
7	CYTOCHECK LABORATORY, LLC	18975	2.8%	83.3%
8	BIOLOGICAL TECHNOLOGY	15676	2.3%	85.6%
9	CLINLAB	12281	1.8%	87.4%
10	PHYSICIANS REFERENCE	9463	1.4%	88.8%
11	PHYSICIANS PATHOLOGY SERVICE	9176	1.4%	90.1%
12	HEARTLAND HEALTH LABORATORIE	8718	1.3%	91.4%
13	MYRTLE HILLIARD DAVIS COMPRE	8190	1.2%	92.6%
14	MAWD PATHOLOGY GROUP PA	6204	0.9%	93.6%
15	PATHOLOGY SERVICES OF SPRING	6151	0.9%	94.5%
16	FERGUSON MEDICAL LABORATORIE	5166	0.8%	95.2%
17	MEDICAL CENTER LABORATORY	4109	0.6%	95.8%
18	WCP LABORATORIES, INC.	3529	0.5%	96.3%
19	EASTRIDGE MEDICAL LABORATORY	2575	0.4%	96.7%
20	TRI-LAKES PATHOLOGY SERVICES	2550	0.4%	97.1%
21	CHARITON LABORATORY	2259	0.3%	97.4%
22	MEDICAL DIAGNOSTIC LAB	2238	0.3%	97.8%
23	ST LUKES PATHOLOGY ASSOCIATE	2219	0.3%	98.1%
24	AMERICAN HEALTH LABORATORY	2153	0.3%	98.4%
25	ST LOUIS UNIVERSITY-PATH	1735	0.3%	98.7%
26	ACCURA MEDICAL LAB	1284	0.2%	98.9%
27	CYTOGENETICS LABORATORY	1276	0.2%	99.0%
28	QUINCY MEDICAL GROUP LABORAT	962	0.1%	99.2%
29	SLU/DEPT INTERNAL MED	947	0.1%	99.3%
30	HEARTLAND LABORATORY, INC.	716	0.1%	99.4%
31	LITTON PATHOLOGY ASSOCIATES	692	0.1%	99.5%
32	PHYSICIANS REFERENCE LABORAT	605	0.1%	99.6%
33	MIDWEST CANCER SCREENING	592	0.1%	99.7%
34	MIDWEST ANATOMIC PATHOLOGY	549	0.1%	99.8%
35	MIDWEST PATHOLOGY CONSULTANT	273	0.0%	99.8%
36	THYROID SPECIALTY LAB., INC.	273	0.0%	99.9%
37	NEUROMUSCULAR CLINICAL	233	0.0%	99.9%
38	AIM LABORATORIES LLC	225	0.0%	99.9%
39	COUNTY SURGICAL PATHLOGY LAB	178	0.0%	100.0%
40	DIALYSIS CLINIC LABORATORY	156	0.0%	100.0%
41	KANSAS PATHOLOGY CONSULTANTS	98	0.0%	100.0%

Figure 25. Labs & Paid Occurrences

8.5 Cost and Revenue Models

The MO-HITECH Finance Workgroup is currently developing initial cost and revenue models based on the proposed MO-HITECH connectivity and business model assumptions. The approach to developing costs is based on estimating the cost and timing for Qualified Organizations expected to connect to the Missouri Statewide HIO over the six year timeline; each Qualified Organization will ~~b~~ring on" or connect a certain number of Missouri's providers to the Statewide HIO. The MO-HITECH Finance Workgroup conducted significant research to understand Missouri's provider landscape and the current state of EHR adoption among Missouri's providers as summarized in Section 8.4 above. The estimated connectivity and timing of Qualified Organizations and the corresponding ramp-up of providers will be combined to determine the adoption of providers over the six year financial model and the costs for expansion over the project. Costs are currently being estimated using the 20 RFI responses that were received on April 16, 2010; estimated costs will be further refined through an actual RFP process planned for Q3 2010.

The figure below provides a summary view of an initial scenario of connectivity among various Qualified Organizations to the Statewide HIO based on goals for connectivity and provider coverage by Qualified Organizations.

		Qualified Orgs	Estimated Coverage							
			Hospitals	Ambulatory Providers	Long Term Care	FQHCs	RHC Providers	Labs Volume*	Pharmacies	Providers & Mid-levels
Provider Based Networks	RHIOs	5	20.0%	20.0%	20.0%		1.0%	5.0%		13.8%
	Hospital Systems / IDNs	10	32.3%	30.0%	2.0%		1.0%	20.0%		21.0%
	FQHCs	1				100.0%				1.7%
	Large Rural Health Centers	1					0.3%			0.1%
	Large Provider Groups/Ofc	21		26.3%						26.3%
Private Networks	Medicaid	1		3.0%			8%			4.0%
	Clearinghouse Based	1		25.0%						12.9%
	Private Pharmacy Network	1							71.2%	
	Large Lab Networks	3						60.0%		
Totals:		44	52.3%	104.3%	22.0%	100.0%	10.3%	85.0%	71.2%	79.8%

* Non hospital or clinic based lab volume. Hospital and clinic based lab data will come through those connections.

Data Not Available to Drive Assumption

Figure 26. Estimated Provider Connectivity by Qualified Organization Type

The figure below shows estimated provider connectivity via respective Qualified Organizations to the Statewide HIO on a quarterly basis through 2014. Provider connectivity is shown as a percentage of total providers in Missouri.

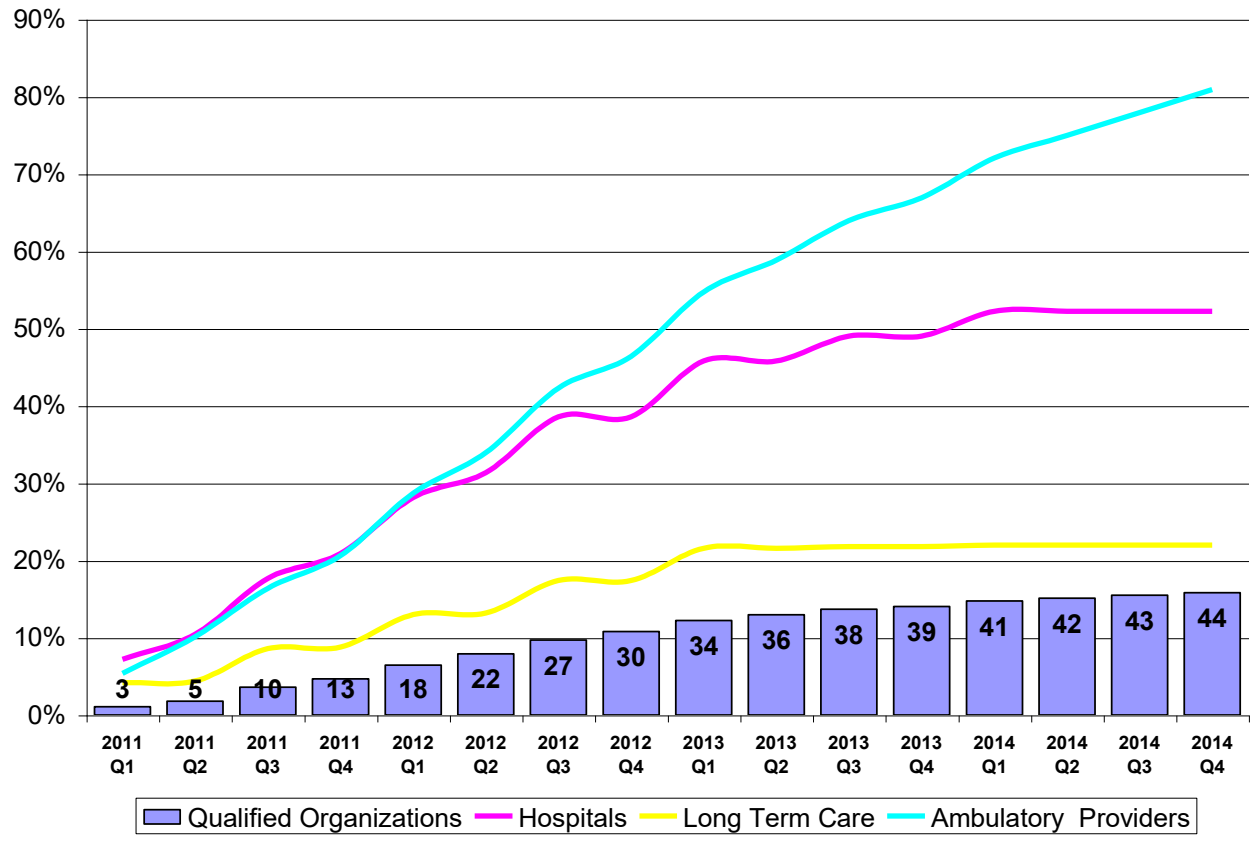


Figure 27. Qualified Organization and Provider Connectivity Assumptions

Figure 27 provides a cumulative view of Qualified Organization connectivity to the Statewide HIO; by the second quarter of 2011 five total Qualified Organizations will be connected to the Statewide HIO, representing a respective percentage of hospitals (in pink), long term care (in yellow), and ambulatory care providers (in light blue). Over the four years of the project, the total number of Qualified Organizations connected to the Statewide HIO will increase to 44 representing approximately 50% of hospitals, 20% of long term care, and 80% of ambulatory care providers. Please note that this scenario is under development and is intended to illustrate anticipated connectivity to the Statewide HIO among Qualified Organizations and the resulting provider coverage. This scenario will continue to be refined through market research and outreach to potential Qualified Organizations.

As referenced in Section 2.5, various costs are associated with participation in the Statewide HIO. To create and support a self-sustaining statewide HIE network, the Statewide HIO will need to charge Qualified Organizations for its services. Potential costs that Qualified Organizations may incur when participating in the statewide HIE network include: connectivity costs; participation fees; and costs to access value- added services.

Using average vendor pricing estimates obtained through the RFI process, the Finance Workgroup estimates that, after initial startup costs, the Statewide HIO will have an annual operating budget between approximately $4M and $6M. The figure below provides projected costs through 2016. Please note that these figures are estimates and will need to be continuously evaluated and adjusted based on vendor pricing and market rates. It is important to note that the cost model below is based on hypothetical adoption assumptions that will be refined by the Statewide HIO; it does not account for potential and ongoing revenue sources that have yet to be identified. The cost model is not reflected in the Budget provided in Appendix M.

Year	2010	2011	2012	2013	2014	2015	2016
Costs							
Governance	$1,128,231	$782,467	$761,695	$620,557	$642,276	$664,756	$688,023
Finance	$67,000	$57,000	$57,000	$57,000	$58,995	$61,060	$63,197
Business and Technical Operations	$137,000	$227,302	$227,302	$127,302	$131,758	$136,369	$141,142
Legal and Policy	$292,000	$282,000	$117,000	$67,000	$69,345	$71,772	$74,284
Consumer Engagement	$507,000	$447,000	$447,000	$397,000	$410,895	$425,276	$440,161
Technology	$1,645,215	$7,550,084	$6,585,298	$5,019,721	$4,316,049	$3,134,548	$3,244,257
Core Infrastructure	*$1,023,000*	*$2,077,000*	*$0*	*$0*	*$0*	*$0*	*$0*
Core Services	*$173,250*	*$351,750*	*$0*	*$0*	*$0*	*$0*	*$0*
Value Added Services	*$45,375*	*$92,125*	*$0*	*$0*	*$0*	*$0*	*$0*
Value Added Services	*$152,625*	*$309,875*	*$0*	*$0*	*$0*	*$0*	*$0*
Qualied Organization Connection	*$0*	*$3,347,500*	*$4,377,500*	*$2,317,500*	*$1,287,500*	*$0*	*$0*
HW / SW Maintenance	*$250,965*	*$1,371,834*	*$2,207,798*	*$2,702,221*	*$3,028,549*	*$3,134,548*	*$3,244,257*
Total Costs	**$ 3,776,446**	**$ 9,345,853**	**$ 8,195,295**	**$ 6,288,580**	**$ 5,629,318**	**$ 4,493,781**	**$ 4,651,064**

Figure 28. Statewide HIO Annual Cost Model Based on Average Vendor Pricing

The Finance Workgroup has considered various approaches to revenue, evaluating the approaches and their potential relative ease of administration in Missouri. The revenue mechanisms considered in greatest detail are described below, along with their respective pros and cons. The revenue mechanisms are not listed in any particular order.

Mechanism	Bearers	Definition / Examples	Pros / Cons
Assessment	• Patients • Providers • Payers • Employers	• Payer assessment on claims • Hospital assessment on discharges	Pros: • Can be applied broadly with everyone paying a portion of costs • Smaller payments when spread across a broad population Cons: • New taxes to public are not popular • Requires legislation

Mechanism	Bearers	Definition / Examples	Pros / Cons
			• Assessment is not directly related to the cost of running or the use of the Statewide HIO • Specific assessments force large payments on specific participants regardless of benefit (payers, hospitals, etc.)
Membership/ Subscription	• Qualified Organizations and Participants	• Upfront fees: Application, initiating, implementation • Ongoing fees: Annual or monthly fees.	Pros: • Payments can vary based on organization type, size and ability to pay • Transparent and easily understood by participants. Easy to administer Cons: • Fees may be limited to providers and provider organizations unless other types of organizations are allowed to electronically exchange health information • Fees are standardized regardless of use or benefit of health information
Usage Fees	• Qualified Organizations and Participants	• Transaction fees • Data volume fees	Pros: • Fees are based on the amount and type of information being exchanged • May be difficult to administer Cons: • Difficult to track and bill for transactions and data volume • These types of fees may discourage providers looking for and exchanging health information
Service / Cost Sharing	• Payers • Employers • Qualified Organizations and Participants	• Payers and employers pay a portion of costs • Pay for performance	Pros: • Fees charged to payer and employer organizations as the major beneficiaries of costs savings related to HIE • Fees can be based on meeting specific pay for performance (P4P) or cost savings goals Cons: • Difficult to define baseline and track actual costs savings and P4P goals

Figure 29. Revenue Mechanism Pros and Cons

The Finance Workgroup's review and discussion of various revenue mechanisms focused on the need to balance transparency and sustainability to support the Statewide HIO's business model. The Workgroup concluded that a membership/subscription fee model, consisting of a bundled upfront connectivity cost and ongoing membership/subscription fees charged on a regular (e.g. monthly, annual) basis will likely be the simplest mechanism for the Statewide HIO to administer and also the most straightforward mechanism for Qualified Organizations to understand. Unlike an assessment or cost sharing fee where the users of the service (e.g. Qualified Organizations, providers) are not the stakeholders directly paying the Statewide HIO, a membership/subscription fee model is attractive because it is directly linked with the Statewide HIO's participants and their access to information through the statewide HIE network. The Finance Workgroup agreed that the membership/subscription fee model was the most attractive and

provided the greatest relative value at the outset of the Statewide HIO's operations, while recognizing that none of the mechanisms presented are mutually exclusive, nor does this conclusion bar the initiation of additional or parallel revenue mechanisms by the Statewide HIO.

In the case of the recommended membership/subscription fee revenue model, payments will flow between the Statewide HIO and Qualified Organizations, and likely between Qualified Organizations and their participants (e.g. providers, hospitals). While this will vary depending on a particular Qualified Organization's business model, it is anticipated that the Organization may "pass through" some of the Statewide HIO fees to its participants. A figure outlining the flow of payment among the Statewide HIO, a Qualified Organization, and providers and hospitals is below.

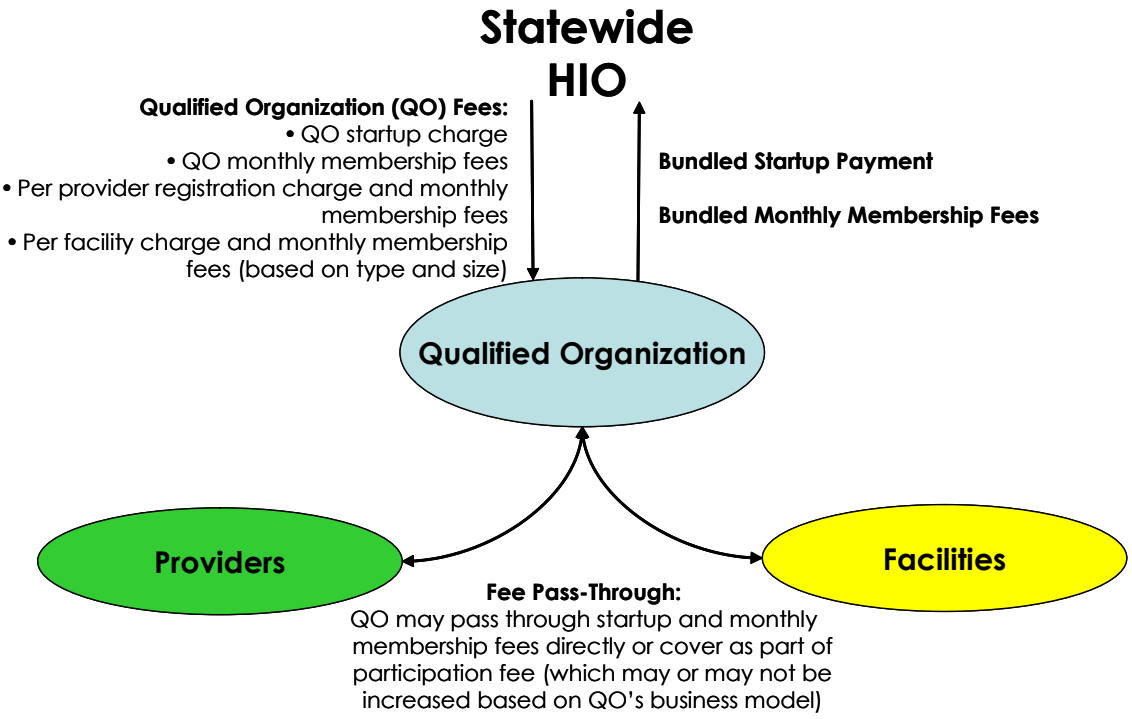


Figure 30. Payment Flow in a Membership/Subscription Fee Model

There are various factors and dynamics that will need to be taken into consideration when developing the membership/subscription fees including the type and size of a Qualified Organization and whether the Qualified Organization will utilize value-added services in addition to core services. The Finance Workgroup recommends that as membership/subscription fees are developed, the Statewide HIO should operate consistent with several principles articulated below.

- The Statewide HIO should pursue an equitable fee model that is not prohibitive to any provider's participation in the Statewide HIO.
- Fees should be:
  - High enough to cover costs and promote sustainability
  - Low enough to encourage broad participation
  - Directly related to the exchange of health information
  - Paid for by all participants and beneficiaries of health information exchange

- Transaction and usage fees discouraging use of or access to health information for treatment purposes should be avoided.

- Fees may be paid through a Qualified Organization (QO) pass-through to the Organization's participants (e.g. providers, hospitals)

The Finance Workgroup will continue to develop revenue assumptions and estimates to inform the development of the Statewide HIO's business model; after the transition to the Statewide HIO it is anticipated that the new organization will continue this work into 2011 to ensure the development of a sustainability plan.

8.6 Sustainability

Financial sustainability will be crucial to ensuring the success of statewide HIE for the state of Missouri. Recognizing that there are not currently widely-accepted sustainability models for HIE, the Statewide HIO, under the guidance of its Board of Directors, will continue sustainability planning into 2011. The Statewide HIO will evaluate, based on the final meaningful use rules and emerging marketplace, the best public and/or private financing mechanisms to support ongoing statewide HIE in Missouri. It is anticipated that the Statewide HIO will consider offering value-added services in demand among its participating Qualified Organizations (e.g. radiological image exchange) that may help support ongoing sustainability. The Statewide HIO will develop a business plan and sustainability model consistent with ONC's requirements by early 2011.

8.7 Controls and Reporting

The State of Missouri Department of Social Services (DSS) will be responsible for the implementation of financial policies, procedures, and controls to maintain compliance with generally accepted accounting principles (GAAP) and all relevant OMB circulars. While the State will outline the appropriate funding sources and mechanisms to the a new organization, the Statewide HIO, DSS will serve as the single point of contact to submit progress and spending reports specific to the State HIE Cooperative Agreement grant money as required by ONC.

The DSS team is familiar with relevant OMB Circulars A-21, A-87, A-122, and A-133, as well as with ONC recipient roles and reporting responsibilities. The team will work collaboratively with ONC and the Statewide HIO to ensure proper accounting of allowable expenditures, direct and indirect costs, and program income. There will be processes and protocols in place to ensure all reporting is done in a timely manner.

After the Board of Directors of the Statewide HIO is established and the documents to create the organization are filed, other registrations and filings needed to support basic business activities will be made. These include application for a federal employer identification number (FEIN), application for a DUNS number (for the receipt of federal funds) and appropriate not-for-profit application with the IRS.

The Board will designate from among its members at least two to oversee for fiscal matters for the transition period before profession staff is hired. The HIO will contract with the state to administer federal HITECH funds soon after it is formed. Therefore, a bank account will be established as soon possible to allow the HIO to receive funds from the state and pay any necessary expenses of the Board. The Board should develop and approve an interim budget or spend plan of funds it anticipates receiving from the state or from other sources early in the HIO's formation. Also, the Board should consider and may find it advisable to proceed with contracts for specific critical business functions (i.e. payroll) in advance of hiring a President and other professional staff. The state will support the Board in setting interim financial procedures with sound internal controls. The state will also assist as needed with administrative functions until HIO professional staff is on-board.

After hiring the professional who will serve as the HIO's comptroller, the President and comptroller will establish financial policies and procedures concerning receipts and accounts receivable, disbursements and accounts payable, fixed assets, purchasing, payroll, budget, cost allocation and reporting. The state will provide guidance to ensure the HIO's financial policies adequately address requirements of entities receiving federal funds (e.g., contractor debarment, lobbying, whistleblower protections, etc.). These procedures will form the HIO's Internal Control Plan, which will ensure that fiscal responsibilities are appropriately segregated and monitored and that financial transactions are properly documented, reconciled and reported in accordance with GAAP. The state will help ensure the HIO's accounting systems satisfy audit and reporting requirements for subrecipients of federal funds. The President and comptroller will secure accounting software sufficient to support the HIO's fiscal policies and procedures, internal controls and special reports required of federal fund subrecipients.

The President will advise the Board on the adoption of personnel policies governing compensation, leave and benefits, conflicts of interest, nondiscrimination, etc.

Prior to the end of the its first fiscal year, the board will need to secure the services of an independent CPA firm to review and comment on the HIO's Internal Control Plan, audit the its financial statements and records, and audit the HIO's use of federal HITECH funds in accordance with requirements of OMB Circular A-133. This firm could also prepare the entity's required IRS filing (Form 990).

8.8 Next Steps

The Statewide HIO will need to continue the work of the MO-HITECH Finance Workgroup to ensure a proper business and sustainability model are developed to support statewide HIE in Missouri. Recognizing the state of the current market and unknown variables (e.g. final meaningful use rules), the Workgroup has done its best to understand the provider landscape in the context of the proposed statewide HIE network. As new financing mechanisms for statewide HIE arise and require evaluation, the Statewide HIO will need to evaluate such mechanisms in the context of Missouri's provider landscape and available resources.

It is anticipated and recommended that the Statewide HIO will ultimately hire staff support in the form of a Chief Financial Officer (CFO) to oversee the business and financial transactions of the organization.

A draft project plan outlining key tasks and milestones is below.

Task	Activities	Start	End
Short Term June – December 2010			
Funding Mechanisms	• Define upfront funding sources and mechanisms • Define ongoing funding mechanisms • Determine minimum pricing to sustain initial core infrastructure and services • Assess funding mechanisms and pricing • Market test pricing with workgroup participants	7/1/10	8/15/10
Procedures and Protocols	• Open required accounts • Setup GL, accounting procedures, protocols, signature authorities, etc. • Hire staff level accountant or procure outsource services • Procure auditor	7/1/10	10/31/10

Update Financial Business Model and Sustainability Plan	• Harmonize core and value added service timing with priorities from Technology and Business and Operations workgroups • Harmonize connectivity assumptions based on QO Letter of Intent response • Harmonize pricing estimates based on RFP responses • Assess impacts on pricing and sustainability • Provide feedback on prioritization of core and value added services and timing • Finalize 2010 Financial Business Model and Sustainability Plan	8/1/10	9/30/10
Long Term 2011 – 2015			
Finalize Financial Business Model and Sustainability Plan	• Harmonize core and value added service timing with implementation progress as well as priorities from Technology and Business and Operations workgroups • Harmonize connectivity assumptions based on QO connectivity progress and roll-out plan • Harmonize pricing estimates based on cost modifications and accounting information • Assess impacts on pricing and sustainability • Provide feedback on prioritization of core and value added services and timing • Finalize Financial Business Model and Sustainability Plan for ONC Submission	1/1/2011	6/15/2011
Annual Reporting	• GAAP • OMB Circulars • State and ONC	2010	2015
Annual Budget Updates	• Harmonize budget with operational plan updates • Finalize annual budget • Work with ONC for approval	2011	2015

9. EVALUATION

9.1 Overview

As outlined in the Strategic Plan and project application, Missouri recognizes the need for a robust evaluation effort to monitor the State‘s progress toward statewide HIE and meaningful use of EHRs among its providers. In compliance with ONC‘s requirements, the Statewide HIO will work with the State to fulfill the reporting requirements outlined in the HIE Cooperative Agreement. The Statewide HIO will ensure adherence to specified reporting requirements, performance and evaluation measures, and methods to collect data and evaluate project performance.

Missouri‘s strategy to evaluate statewide HIE will focus on:

- Prioritizing and supporting approaches to collect baseline and ongoing metrics within the five statewide HIE planning domains and consumer engagement to ensure accountability and proper reporting in alignment with ONC’s requirements;
- Coordinating with and leveraging other public and private data collection and reporting activities and existing evaluation methodologies, tools, and strategies;
- Utilizing a flexible and incremental approach to phase-in data collection and reporting of process and outcome measures based on State resources and progression of statewide HIE functionalities;
- Incorporating the State’s public health and clinical quality priorities in evaluation metrics; and
- Applying evaluation findings to drive further health care quality improvements.

9.2 Approach

The Statewide HIO, in consultation with the Board of Directors and the ONC evaluation support contractor, will develop an evaluation plan and scope of work for the four year grant period. The Statewide HIO will subsequently release an RFP for evaluation services and, as outlined in the FOA, at least three percent of the total project cost will be allocated to evaluation services.

The Statewide HIO will prioritize the performance measures outlined in the FOA for state self-assessment and national evaluation, and it will also examine other opportunities for evaluation in coordination with MO HealthNet (the State Medicaid Agency), public health, and other potential partners that stand to benefit from the information collected.

Once in place, the Statewide HIO will continuously assess its approach to evaluation, the appropriateness and relevance of measures, and timely collection of data. The Statewide HIO will adjust the evaluation approach as necessary to ensure an overall effective program.

10. COORDINATION

10.1 Overview

Missouri is keenly aware of the need and benefits supporting coordination with Medicaid, relevant ARRA programs, and other states. Throughout the Strategic and Operational Planning process, MO-HITECH has made targeted efforts to monitor the activities of its eight border states and facilitate an open dialogue with other ARRA grant awardees.

MO-HITECH is committed to ensuring strong coordination, integration, and alignment of its statewide HIE development with concurrent Missouri initiatives and its border states as appropriate. MO-HITECH expects that the harmonization of these activities will not only offer opportunities to advance statewide HIE but also maximize impact and prevent duplicating commitments of scarce resources.

The Transform Missouri Project Team, created by Governor Nixon after the passage of ARRA, is comprised of key staff representing the fourteen relevant Executive Branch departments. The Team has been charged with analyzing the Recovery Act legislation and identifying state programs and projects that could benefit from the Recovery Act, developing a coordinated plan designed to maximize the impact of the Recovery Act, and implementing guidelines and practices that provide transparency and accountability. DHSS and DSS representatives on the Transform Missouri Project Team also serve as key staff in MO-HITECH and provide a critical link for the integration of statewide HIE development with Missouri‘s parallel Recovery Act initiatives.

10.2 Medicaid

Approximately 15.6% of Missouri‘s residents are currently Medicaid beneficiaries; Medicaid coverage is expected to increase to over 20% of Missouri residents in the next five years under federal health care reform. Therefore, coordination with MO HealthNet, Missouri‘s Medicaid program is a crucial component of statewide HIE planning and implementation.

Under Section 4201 of ARRA, State Medicaid Agencies are charged with the administration and oversight of Medicaid meaningful use incentive payments; a 90% Federal financial participation (FFP) match is available for State expenses related to planning, implementation, administration and oversight activities.. In accordance with this guidance, MO HealthNet submitted a Planning Advanced Planning Document (P-APD) requesting $1.7M in Federal and State match funding to support the development of a State Medicaid HIT Plan (SMHP). The Federal government requires all states participating in the Medicaid EHR incentive program to complete an SMHP.

Missouri‘s statewide HIE strategy will leverage provider participation in the Medicaid incentive program to facilitate exchange. Likewise, MO HealthNet‘s health IT strategy will integrate statewide HIE capabilities to support providers‘ realization of meaningful use incentives and ultimately improve health care coordination, quality and outcomes for all MO HealthNet beneficiaries. MO HealthNet has already invested significant resources by developing a Service Oriented Architecture following Medicaid Information Technology Architecture (MITA) guidelines and is currently phasing-in implementation of connectivity with other HIE partners. In developing the technical infrastructure to support statewide HIE, Missouri intends to leverage MO HealthNet assets and to support MO HealthNet providers and their patients to ensure their access to statewide HIE services.

Fundamental to MO-HITECH‘s strategy for statewide HIE coordination and MO HealthNet health IT adoption activities is the employment of a shared leadership and accountability structure. Missouri DSS houses the MO-HITECH Office, the lead organization for statewide HIE development, the MO HealthNet Division, and DSS Director Ronald Levy serves as Missouri‘s Health IT Coordinator. MO HealthNet leadership – Director Dr. Ian McCaslin and Deputy Director Dr. George Oestreich – also actively participate in the MO-HITECH initiative. Dr. McCaslin serves on the MO-HITECH Advisory Board and chairs the Business and Technical Operations Workgroup while Dr. Oestreich staffs both the Business

and Technical Operations and the Technical Infrastructure Workgroup. Dr. Oestreich also directly manages MO HealthNet's health IT strategy and planning and implementation activities related to the Medicaid EHR incentive program, further ensuring close coordination.

Missouri has identified several interdependencies between the statewide HIE and Medicaid health IT planning efforts and organized coordination activities into five substantive work streams:

- **Meaningful Use** – Current public health and clinical quality reporting, such as HEDIS and CAHPS measures, and Missouri's HIE goals will be integrated in MO HealthNet's meaningful use definition and increasing requirements for meaningful use will be timed to align with statewide HIE capacities. Consideration will also be given to the HIE requirements under the Federal Medicare meaningful use definition. MO HealthNet and state objectives and initiatives will be coordinated to encourage health IT and HIE adoption and meaningful use in the Medicaid provider population.

- **Medicaid Data Sharing** – MO HealthNet data will be made available through the Statewide HIO to allow for broader care coordination, and statewide HIE and Medicaid health IT planning efforts currently underway include a coordinated review of significant existing state health IT investments – such as the Departmental Client Number utilized by the State's primary health and human services agencies, and the collaborative effort to address HIE between these agencies, and the Missouri Clinical Management Services, Pharmacy, and Prior Authorization system (CMSP) – to explore the potential for leveraging and integrating these assets into a statewide infrastructure for HIE. Clinical decision support and other services made available through statewide HIE will also be incorporated to facilitate quality improvement

- **Medicaid Incentive Program Deployment** – Missouri plans to capitalize on existing health IT functionality via its eMomed and CyberAccess systems. Given their robust functionality, both systems will play a central role in all aspects of program deployment, including provider enrollment, the attestation process, payment processing, clinical and functional meaningful use requirements, and audit and oversight activities. While relying primarily on these MO HealthNet systems, ultimately the goal is close coordination and integration with the state's broader health IT architecture in order to fulfill program requirements and strengthen and extend HE efforts.

- **Program Administration and Planning** – As described previously, Missouri's Medicaid health IT and strategic HIE planning activities are tightly coordinated. Missouri's statewide HIE goals, objectives, and capacities have been integrated into statewide Medicaid planning efforts, as reflected in SMHP development.

- **Medicaid/Medicare Incentive Program Coordination** – HIE requirements under the Federal Medicare meaningful use definition will inform MO HealthNet's efforts to advance HIE. The MO HealthNet planning process for implementing the Medicaid EHR Incentive Program has relied on Federal requirements to coordinate this program with the Medicare incentives. The primary goals of this coordination is to avoid duplicating provider payments, facilitate provider enrollment in the most appropriate incentive program. In addition, MO HealthNet has planned community stakeholder collaboration in order to develop targeted communications pieces in order to educate the provider community about the incentive programs.

10.3 ARRA Programs

Regional Extension Center

In parallel with the State HIE Cooperative Agreement Program, ONC announced the Regional Center Cooperative Agreement Program. Through the Regional Extension Center Program, ONC has awarded 60 grants to establish and support Regional Extension Centers to help priority primary care providers in defined geographic areas select, adopt, implement, and meaningfully use EHRs; priority primary care providers are those providers in a practice of ten or fewer providers.

- On April 6, 2010 the Missouri HIT Assistance Center was notified it would be awarded $6.8 million to serve as a regional extension center for the state of Missouri and assist 1,200 priority primary care providers over two years (by 2012). The Missouri HIT Assistance Center is a partnership among several organizations, led by the University of Missouri, including:

- University of Missouri, Department of Health Management and Informatics and the Center for Health Policy

- Missouri Telehealth Network

- Primaris (Missouri‘s Quality Improvement Organization)

- Missouri Primary Care Association

- Kansas City Quality Improvement Consortium

The Missouri HIT Assistance Center partner organizations have been active participants in the MO-HITECH initiative; leadership from several of the partner organizations serve as MO-HITECH Advisory Board members and Workgroup Co-Chairs, and participate actively in Workgroup meetings. MO-HITECH recognizes the critical role that the Missouri HIT Assistance Center will play in promoting meaningful use among small and solo practice primary care practice physicians, many of whom are Medicaid providers and may be located in rural areas of the state.

The Missouri HIT Assistance Center‘s strategy will leverage existing relationships with providers from previous work conducted (e.g., providers who participated in the DOQ-IT initiative with Primaris, or Federally Qualified Health Centers who are implementing EHRs in their clinics) and engage these providers early. These providers will be able to give early feedback to allow the Assistance Center to make revisions to its approach or offerings and could also help to engage harder-to-reach providers.

The Missouri HIT Assistance Center recently submitted an application to ONC on April 30th for additional funding to provide services to critical access and rural hospitals in Missouri. This funding is intended to be a supplement to the Regional extension centers, allowing for up to $12,000 per critical access or rural hospital to provide assistance to the hospital with EHR adoption. The HIT Assistance Center plans to partner with the Hospital Industry Data Institute, a subsidiary of the Missouri Hospital Association, to serve 55 critical access and rural hospitals around the state.

MO-HITECH is committed to working with the Missouri HIT Assistance Center to identify opportunities for collaboration, provider education, and technical assistance, among others. MO-HITECH staff continues to participate in planning activities as the Missouri HIT Assistance Center finalizes its plans and moves forward with activities.

Broadband

Missouri launched a public-private initiative, *MoBroadbandNow*, in the summer of 2009, to help expand internet access to more of its citizens. The *MoBroadbandNow* plan outlines a comprehensive vision for

broadband that includes five Round 2 applications for the Comprehensive Communities Infrastructure Program currently being considered by the National Telecommunications and Information Administration (NTIA).The Missouri applicants are Boycom Cablevision, Bluebird Media, Sho-Me Technologies, American Fiber Systems, and Springnet. These 5 applicants will serve as the middle-mile backbone of Missouri's efforts to ensure broadband access to 95% of all residents.

The *MoBroadbandNow* plan also includes seven last-mile applications – Big River Telephone, Socket, Cass County, CoMo Electric Co-op, United Electric Co-op, Rural Missouri Broadband and Finally Broadband. These applications used the technology and economic development model pioneered in the successful First Round application approved by the USDA Rural Utilities Service (RUS), for the Ralls County Electric Cooperation in Missouri.

The Department of Higher Education has submitted a Public Computing Center grant in Round Two that, if funded, will create 23 public computing centers within the boundaries of seven of Missouri's community colleges.

Public Health Labs

Missouri DHSS applied for the ARRA Grant for Infrastructure and Interoperability Support for Public Health Labs. The FOA was posted on March 19 inadvertently, and was subsequently pulled. The grant opportunity will be reissued. When it is reissued, Missouri DHSS will apply. The following is from the grant application abstract:

> ~~O~~ver the past ten years, the Missouri Department of Health and Senior Services has made major strides in the development and implementation of information systems, both applications and infrastructure. One of the most recent is the Missouri State Public Health Laboratory's (MSPHL) implementation of OpenELIS 1, a Laboratory Information Management System (LIMS) which allows the laboratory to trace and track samples or specimens that are received into the laboratory, tests performed, methods utilized, their results, any changes to results, and the capability to electronically report those results to CDC. These results are made available to the specimen submitter and our state epidemiologists.
>
> MSPHL continues its innovation by partnering with the St. Louis County Health Department (SLCHD) to develop electronic reporting of HIV/STD results using CDC HL7 standards. Hundreds of messages were received by SLCHD during the test period ending in March 2010. Ninety-nine per cent of the messages were passed directly to the patient's chart.
>
> MSPHL is requesting funds to enhance its OpenELIS 1 LIMS system to electronically report the results of laboratory tests for Missouri's notifiable diseases and Influenza to our state epidemiologist and our state public health program staff responsible for follow-up. Contractual IT staff will be used to complete the necessary work to allow Missouri to enhance the current electronic messaging using national codes."

Workforce

Funding to develop programs and curricula to prepare a skilled workforce for the deployment of health IT has been followed with great interest in Missouri and will create demand at community colleges and in health care institutions around the state.

In February, the U.S. Department of Labor awarded ARRA *"Green Jobs" Health Care Sector and Other High Growth and Emerging Industries* grants to two institutions in Missouri. The Full Employment Council in Kansas City was awarded $4,988,344, and Crowder College in Neosho, was awarded $3,576,700.

The Full Employment Council grant is a bi-state grant, serving Missouri and Kansas counties. The Council will be partnering with Kansas City hospitals, long term care facilities, community colleges and health care

industries to develop a career track to create a pipeline for of credentialed health care workers, along with an HIT trained workforce.

Crowder College, at all of its four campuses, will be using this grant funding to expand programs for training occupational therapy and physical therapy assistants, substance abuse counselors and allied health.

Missouri is also monitoring the grants that may be available under the Patient Protection and Affordable Care Act of 2010, along with the Health Care and Education Affordability Act of 2010 for opportunities to further develop our health care and health IT workforce.

10.4 Interstate Coordination

Missouri welcomes the opportunity to collaborate with other states. Bordered by eight states – Iowa, Illinois, Kentucky, Tennessee, Arkansas, Oklahoma, Kansas, and Nebraska, Missouri is keenly aware of the potential challenges to interstate HIE and the immediate need to collaborate with its border states and others. Missouri has appreciated the opportunity to participate in several interstate collaborations throughout the strategic and operational planning phases including:

- **RTI State Health Policy Consortium – Midwest Consortium Project:** Missouri is one of ten states that collaborated on an application to RTI under the State Health Policy Consortium Opportunity. The proposed project will bring ten states together to form the Midwest Consortium to address barriers to interstate data exchange; the Consortium includes seven of Missouri‘s eight border states. Issues the Consortium plans to address include:
    - Data sharing agreements including opt-in and opt-out policies
    - Compliance with privacy laws, rules, and regulations across Consortium states
    - Methods for user authentication and authorization
    - Effective communication with physicians about privacy and security
    - Meaningful consumer engagement in privacy and security.
- **Medication Management Request for Information (RFI):** The State of Tennessee developed a draft request for information (RFI) to gauge the industry‘s ability to offer robust enterprise medication management services on a statewide level. Missouri reviewed and provided feedback on the RFI, joining a consortium of ten states to release the RFI to the vendor community. The RFI response are expected mid-July and Missouri and the other states will review the information received to determine next steps.
- **Collaboration with Kansas:** Missouri shares a unique border with Kansas on the western side of the state; the Kansas – Missouri border is *not* physically marked by a river, bridge, or natural landmark and residents of both states regularly work, attend school, and seek health care in their border states. Both Missouri and Kansas are aware of the challenge this presents for HIE and coordination of care for patients seeking care in two states. As a result, Missouri and Kansas have engaged in an active dialogue with each other with the intent to coordinate HIE and Medicaid planning activities. The states are also exploring a potential memorandum of understanding (MOU) that would enable data sharing among the states‘ providers.
- **Statewide HIE Coalition:** The Statewide HIE Coalition (~~t~~he Coalition”) is a coalition of 17 states with advanced health information exchange plans or capacity that are working to build the infrastructure necessary for nationwide adoption and meaningful use of health information technology. Missouri

participates in regular calls with the Coalition and has been a signatory on the Coalition‘s comments to ONC and CMS.

11. BUDGET

11.1 Overview

Missouri's budget covers the four calendar years of the Cooperative Agreement Program's proposed project period, from January 15, 2010 through December 31, 2013. This time period represents portions of five fiscal years:

- FY2010 – 9 months from January 15, 2010 through September 30, 2010.
- FY2011 – 12 months from October 1, 2010 through September 30, 2011.
- FY2012 – 12 months from October 1, 2011 through September 30, 2012.
- FY2013– 12 months from October 1, 2012 through September 30, 2013.
- FY2014 – 3 months from October 1 2013 through December 31, 2013

As required by the FOA, the original project application budget included justification/narratives for the combined multi-year project period as well as each of the fiscal years comprising the project period. Since the submission of the project application, MO-HITECH staff have refined the budget to reflect current spending and updated assumptions arrived at through the Operational Planning process.

The updated budget can be found in Appendix M; along with the budget there is a brief summary of changes outlining discrepancies between the project application budget and the Operational Plan budget.

The budget for the proposed project continues to be based on the assumptions laid out in the grant application:

- **The State plans to use non-federal cash to match federal grant funds:** At the time of submission the State plans to use non-federal cash to match federal grant funds.
- **Additional staff and counsel that will be hired by MO-HITECH to support the project:** Staffing is identified by position and includes associated salary costs.
- **New and existing contracts:** New contracts and portions of existing contracts, such as the State's contract with a consulting firm to assist in the development of the Strategic and Operational Plans, are based on amounts spent after January 15, 2010.
- **Procurements to expand Missouri's technical infrastructure to support HIE**: The budget breaks out separate estimates for equipment and services for two large procurements, one in FY 2010 and one in FY 2011. However, based on the outcome of RFP for statewide technical services, the amounts and classifications of these items could change.

APPENDICES

A. Definition of Terms

American Recovery and Reinvestment Act of 2009 (ARRA): is a $787.2 billion stimulus measure, signed by President Obama on February 17, 2009, that provides aid to states and cities, funding for transportation and infrastructure projects, expansion of the Medicaid program to cover more unemployed workers, health IT funding, and personal and business tax breaks, among other provisions designed to ―stimulate" the economy.

Centers for Medicare and Medicaid Services (CMS): is a federal agency within the United States Department of Health and Human Services that administers the Medicare program and works in partnership with state governments to administer Medicaid, the State Children's Health Insurance Program (SCHIP), and health insurance portability standards.

Certification Commission for Healthcare IT (CCHIT): is a recognized certification body (RCB) for electronic health records and their networks. It is an independent, voluntary, private-sector initiative, established by the American Health Information Management Association (AHIMA), the Healthcare Information and Management Systems Society (HIMSS), and The National Alliance for Health Information Technology.

Consent: The Health Insurance Portability and Accountability Act Privacy Rule sets out two types of permission that are used to permit a covered entity to use or disclose protected health information: consent and authorization. A written ―authorization" is required in certain circumstances, including for most disclosures of psychotherapy notes; to disclose health information for ―marketing"; and for uses and disclosures that are not otherwise required or permitted by the privacy regulation. The Privacy Rule, however, generally permits a covered entity to use and disclose protected health information without an individual's authorization for treatment, payment and health care operations, and certain other specified purposes.

The Privacy Rule includes detailed requirements for the authorization form that must be used to obtain authorization when required. All authorization forms must contain certain core elements, including:

- A specific description of the information to be used or disclosed and the purposes of the use or disclosure;
- The identity of the person or class of persons authorized to make the requested use or disclosure;
- The identity of the person or class of persons to whom the covered entity may make the requested use or disclosure;
- A statement of the person's right to revoke the authorization; and
- The signature and date of the authorization.

A general ―consent" is permitted but not required for use or disclosure of information for treatment, payment, and health care operations. Covered entities that choose to obtain a patient's consent for use or disclosure of information for treatment, payment, and health care operations have complete discretion in designing their consent form and process. The regulation does not define the term ―consent" and does not specify any requirements for the content of consent forms.

Electronic Health Record (EHR): As defined in the ARRA, an Electronic Health Record (EHR) means an electronic record of health-related information on an individual that includes patient demographic and clinical health information, such as medical histories and problem lists; and has the capacity to provide

clinical decision support; to support physician order entry; to capture and query information relevant to health care quality; and to exchange electronic health information with, and integrate such information from other sources.

Electronic Prescribing (E-Prescribing): A type of computer technology whereby physicians use handheld or personal computer devices to review drug and formulary coverage and to transmit prescriptions to a printer or to a local pharmacy. E-prescribing software can be integrated into existing clinical information systems to allow physician access to patient-specific information to screen for drug interactions and allergies.

Federal Communications Commission (FCC): is the United States government agency charged with regulating interstate and international communications by radio, television, wire, satellite and cable.

Federally-Qualified Health Centers (FQHCs): are "safety net" providers serving communities, migrant and homeless populations, and public housing residents. FQHCs are governed by consumer-majority boards and provide services to all persons regardless of ability to pay. They charge for services according to a sliding-fee scale based on patients' family income and size. FQHCs are funded by the federal government under Section 330 of hte Public Health Service Act.

Health Information Exchange (HIE): As defined by the Office of the National Coordinator and the National Alliance for Health Information Technology (NAHIT), Health Information Exchange means the electronic movement of health-related information among organizations according to nationally recognized standards.

Health Information Technology (Health IT): As defined in the ARRA, Health Information Technology means hardware, software, integrated technologies or related licenses, intellectual property, upgrades, or packaged solutions sold as services that are designed for or support the use by health care entities or patients for the electronic creation, maintenance, access, or exchange of health information.

Health Information for Economic and Clinical Health (HITECH) Act: collectively refers to the health information technology provisions included at Title XIII of Division A and Title IV of Division B of the ARRA.

Health Insurance Portability and Accountability Act (HIPAA): was enacted by Congress in 1996. Title I of HIPAA protects health insurance coverage for workers and their families when they change or lose their jobs. Title II of HIPAA, known as the Administrative Simplification (AS) provisions, requires the establishment of national standards for electronic health care transactions and national identifiers for providers, health insurance plans, and employers. The Administration Simplification provisions also address the security and privacy of health data. The standards are meant to improve the efficiency and effectiveness of the nation‘s health care system by encouraging the widespread use of electronic data interchange in the U.S. health care system.

Health Information Organization (HIO): An organization that oversees and governs the exchange of health-related information among organizations according to nationally recognized standards.

Healthcare Information Technology Standards Panel (HITSP): A multi-stakeholder coordinating body designed to provide the process within which stakeholders identify, select, and harmonize standards for communicating and encouraging broad deployment and exchange of healthcare information throughout the healthcare spectrum. The Panel‘s processes are business process and use-case driven, with decision making based on the needs of all NHIN stakeholders. The Panel‘s activities are led by the American National Standards Institute (ANSI), a not-for-profit organization that has been coordinating the U.S. voluntary standardization system since 1918.

Interface: A means of interaction between two devices or systems that handle data.

Interoperability: Interoperability means the ability of health information systems to work together within and across organizational boundaries in order to advance the effective delivery of healthcare for individuals and communities.

Meaningful EHR User: As set out in the ARRA, a Meaningful EHR user meets the following requirements: (i) use of a certified EHR technology in a meaningful manner, which includes the use of electronic prescribing; (ii) use of a certified EHR technology that is connected in a manner that provides for the electronic exchange of health information to improve the quality of health care; and (iii) use of a certified EHR technology to submit information on clinical quality and other measures as selected by the Secretary of HHS.

Nationwide Health Information Network (NHIN): A national effort to establish a network to improve the quality and safety of care, reduce errors, increase the speed and accuracy of treatment, improve efficiency, and reduce healthcare costs.

Notification: While the term notification is not directly contemplated in Health Insurance Portability and Accountability Act, the concept of providing notice of privacy practices is. The Privacy Rule requires a covered entity to provide individuals with a written notice describing the entity's privacy practices. Health plans are required to give notice at enrollment and to notify individuals every three years that the privacy practices notice is available. Providers that have a direct treatment relationship with an individual are only required to give notice at the date of the first service delivery; and except in emergency circumstances, must make a good faith effort to obtain a written acknowledgment from the individual of receipt of the notice. Providers must also have notice posted on the premises. Both plans and providers have special notice requirements if their privacy practices change. Clearinghouses acting as business associates of another covered entity are not required to give notice to patients. The notice must include:

- A description of an individual's rights with respect to protected health information and how the individual may exercise those rights;
- The legal duties of the covered entity;
- A description of the types of uses and disclosures of information that are permitted, including those that are permitted or required without the individual's written authorization;
- How an individual can file complaints with the covered entity and the Secretary of HHS;
- How the covered entity will provide the individual with a revised notice if the notice is changed;
- A contact person for additional information; and
- The date on which the notice is in effect.

Office of the National Coordinator (ONC): serves as principal advisor to the Secretary of HHS on the development, application, and use of health information technology; coordinates HHS's health information technology policies and programs internally and with other relevant executive branch agencies; develops, maintains, and directs the implementation of HHS' strategic plan to guide the nationwide implementation of interoperable health information technology in both the public and private health care sectors, to the extent permitted by law; and provides comments and advice at the request of OMB regarding specific Federal health information technology programs. ONC was established within the Office of the Secretary of HHS in 2004 by Executive Order 13335.

Privacy: In December 2008, the Office of the National Coordinator for Health IT released its "Nationwide Privacy and Security Framework For Electronic Exchange of Individually Identifiable Health Information," ("Framework") in which it defined privacy as, "An individual's interest in protecting his or her individually identifiable health information and the corresponding obligation of those persons and entities that

participate in a network for the purposes of electronic exchange of such information, to respect those interests through fair information practices." This language contrasts with the definition of privacy included in the National Committee on Vital and Health Statistics' (~~N~~CVHS") June 2006 report, entitled, ~~P~~rivacy and Confidentiality in the Nationwide Health Information Network." In its report, NCVHS recommended the following definition for ~~p~~rivacy": ~~H~~ealth information privacy' is an individual's right to control the acquisition, uses, or disclosures of his or her identifiable health data."

Regional Health Information Organization (RHIO): A health information organization that brings together healthcare stakeholders within a defined geographic area and governs health information exchange among them for the purpose of improving health and care in that community.

Regional Extension Centers (RCs): As set out in the ARRA, Regional Extension Centers will be established and may qualify for funding under ARRA to provide technical assistance and disseminate best practices and other information learned from the Health Information Technology Research Center to aid health care providers with the adoption of health information technology.

State-Designated Entities (SDEs): As defined in the ARRA, State-Designated Entities (SDEs) may be designated by a State as eligible to receive grants under Section 3013 of the ARRA. To qualify as an SDE, an entity must be a not-for-profit entity with broad stakeholder representation on its governing board; demonstrate that one of its principal goals is to use information technology to improve health care quality and efficiency through the authorized and secure electronic exchange and use of health information; adopt nondiscrimination and conflict of interest policies that demonstrate a commitment to open, fair, and nondiscriminatory participation by stakeholders; and conform to other requirements as specified by HHS.

Security: The Health Insurance Portability and Accountability Act Security rule defines ~~S~~ecurity or Security measures" as ~~e~~ncompass[ing] all of the administrative, physical, and technical safeguards in an information system."

U.S. Department of Health and Human Services (HHS): is the federal government agency responsible for protecting the health of all Americans and providing essential human services. HHS, through CMS, administers the Medicare (health insurance for elderly and disabled Americans) and Medicaid (health insurance for low-income people) programs, among others.

B. MO-HITECH Advisory Board

Barrett A. Toan, Private Sector Co-Chair

Ronald J. Levy, Director, Missouri Department of Social Services and HIT Coordinator, Public Sector Co-Chair

Donald Babb, CEO, Citizens Memorial Hospital, Bolivar

Steve Calloway, RPh, BS Pharm, Staff Pharmacist, University of Missouri

Representative Shalonn Curls

Margaret T. Donnelly, Director, Missouri Department of Health and Senior Services

Karen Edison, MD, Director, Missouri Center for Health Policy

Tracy Godfrey, MD, Family Physician, Joplin

Tom Hale, MD, PhD, Medical Director, Center for Innovative Care, Sisters of Mercy Health System

Sandra H. Johnson, JD, Interim Dean and Professor Emerita of Law and Health Care Ethics, Saint Louis University School of Law

Herb B. Kuhn, President & CEO, Missouri Hospital Association

Ian McCaslin, MD, Director, MO HealthNet Division

Joe Pierle, CEO, Missouri Primary Care Association

Verneda Robinson, CEO, Swope Health Systems

Andrea Routh, Executive Director, Health Advocacy Alliance

Senator Eric Schmitt

Mahree Skala, Executive Director, Missouri Association of Local Public Health Agencies

Steven C. Walli, President & CEO, United Healthcare Missouri

David Weiss, CIO, BJC Healthcare

Karl Wilson, President & CEO, Crider Health Center

C. MO-HITECH Workgroup Co-Chairs

Governance Workgroup:

- Steve Roling, President and CEO, Healthcare Foundation of Greater Kansas City
- Ronald J. Levy, Director, Missouri Department of Social Services and Health IT Coordinator for the State of Missouri

Consumer Engagement Workgroup

- Scott Lakin, Lakin Consulting, member of the Board of Directors of the Missouri Health Advocacy Alliance, former state legislator and former Director, Department of Insurance
- Margaret T. Donnelly, Director, Department of Health and Senior Services

Technical Infrastructure Workgroup

- Mitzi Cardenas, CIO, Truman Medical Center
- Doug Young, CIO, Missouri Information Technology Services Division

Business and Technical Operations Workgroup:

- Karl Kochendorfer, MD, University of Missouri, Columbia
- Ian McCaslin, MD, Director, Missouri HealthNet Division, Department of Social Services

Legal/Policy Workgroup:

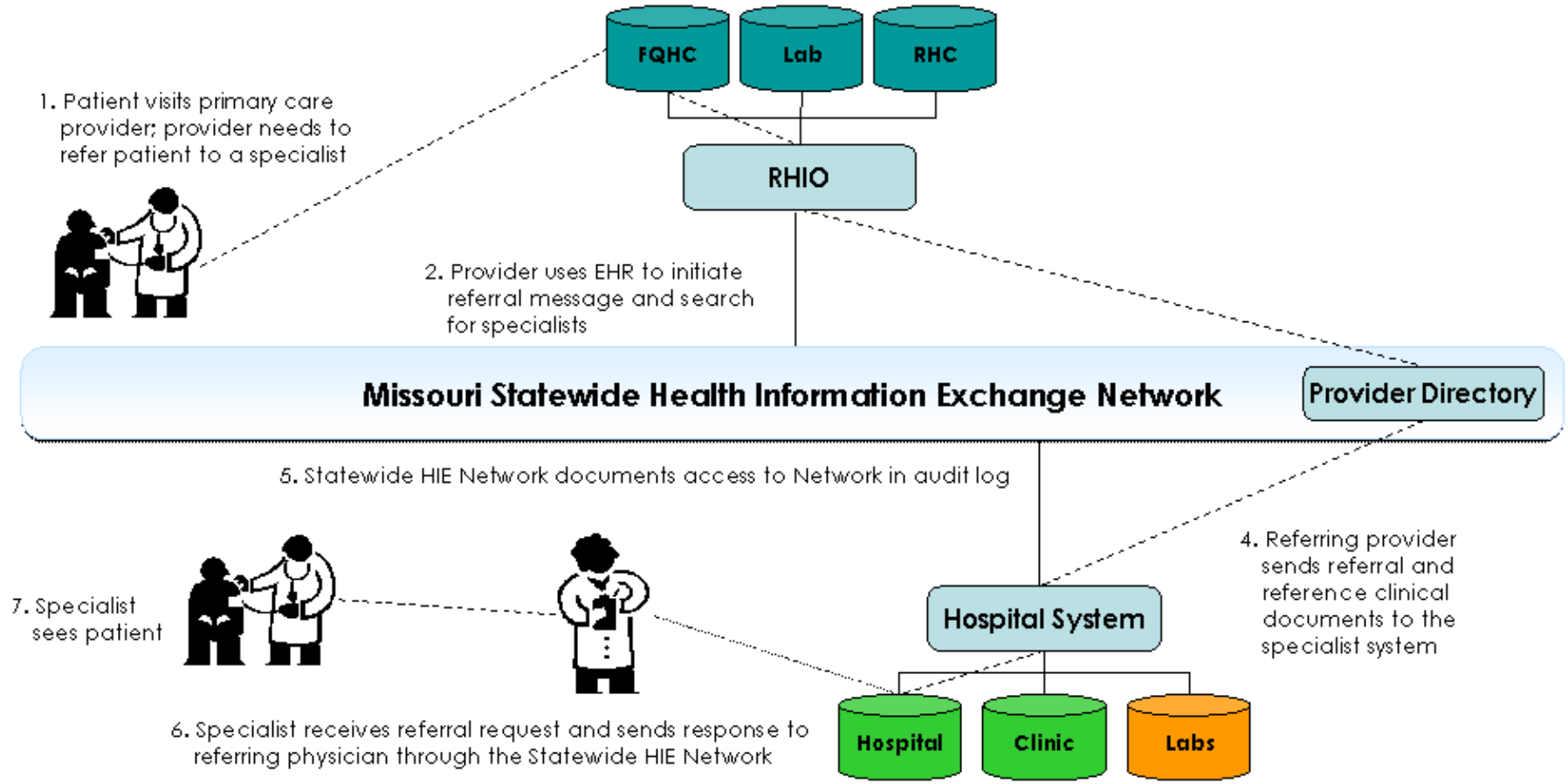
- Sandra H. Johnson, JD, Interim Dean and Professor Emerita of Law and Health Care Ethics, Saint Louis University School of Law
- Doug Nelson, Counsel, Governor‘s Office, State of Missouri

Finance Workgroup

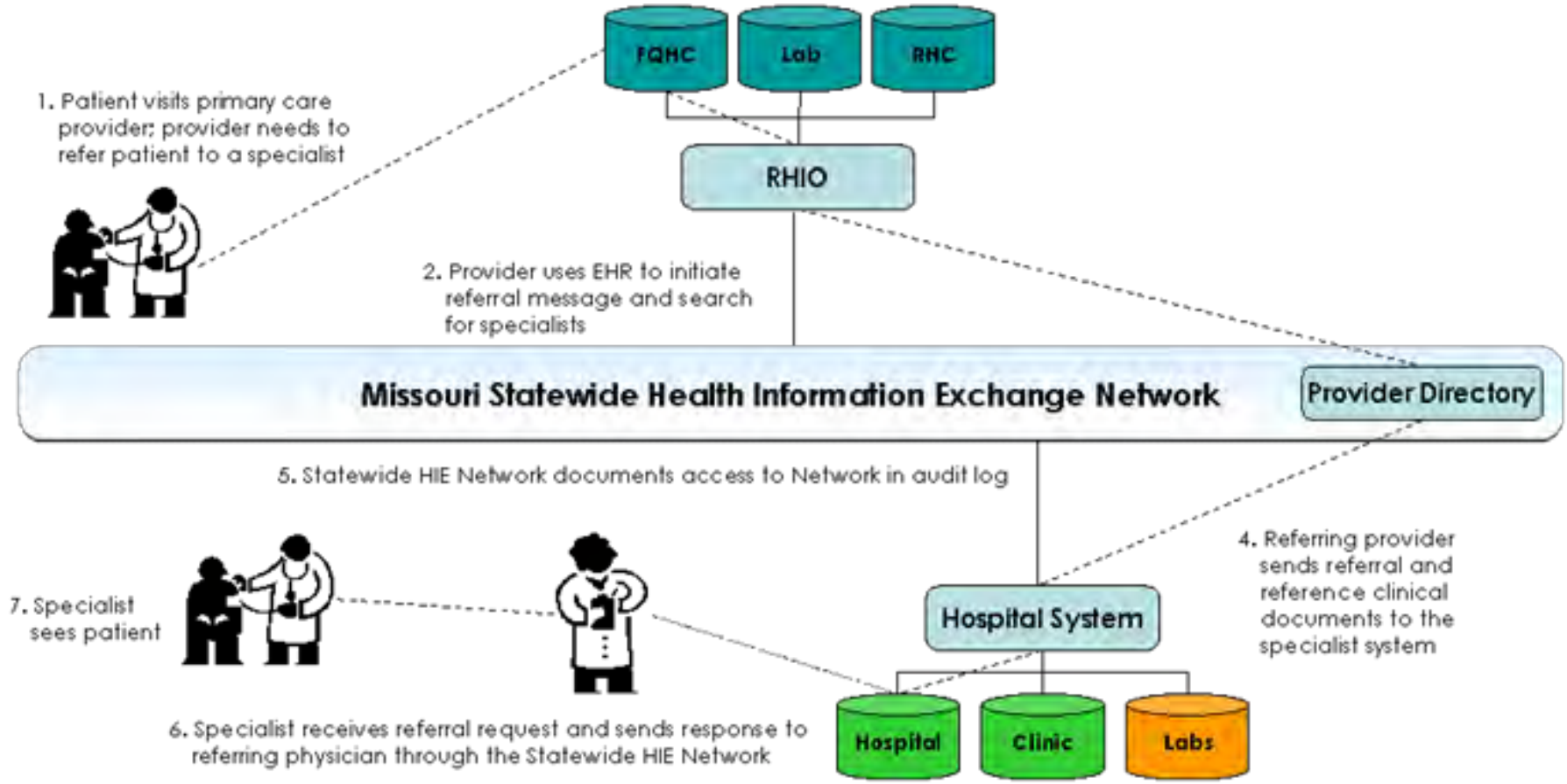
- Donna Checkett, Senior Vice President, Aetna State Government Relations
- John M. Huff, Director, Missouri Department of Insurance

D. Use Cases

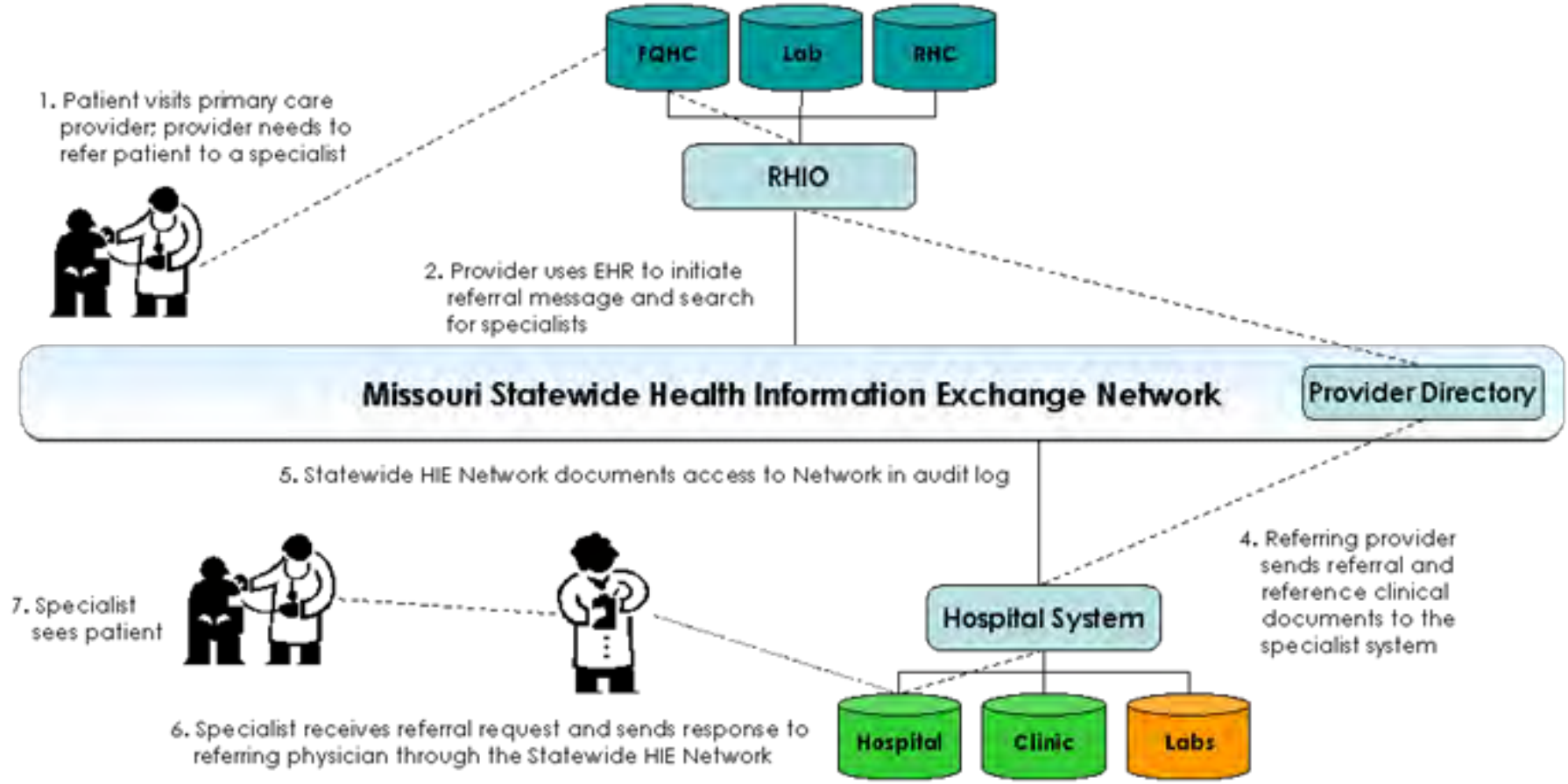
1. Clinical Information Exchange (Push)



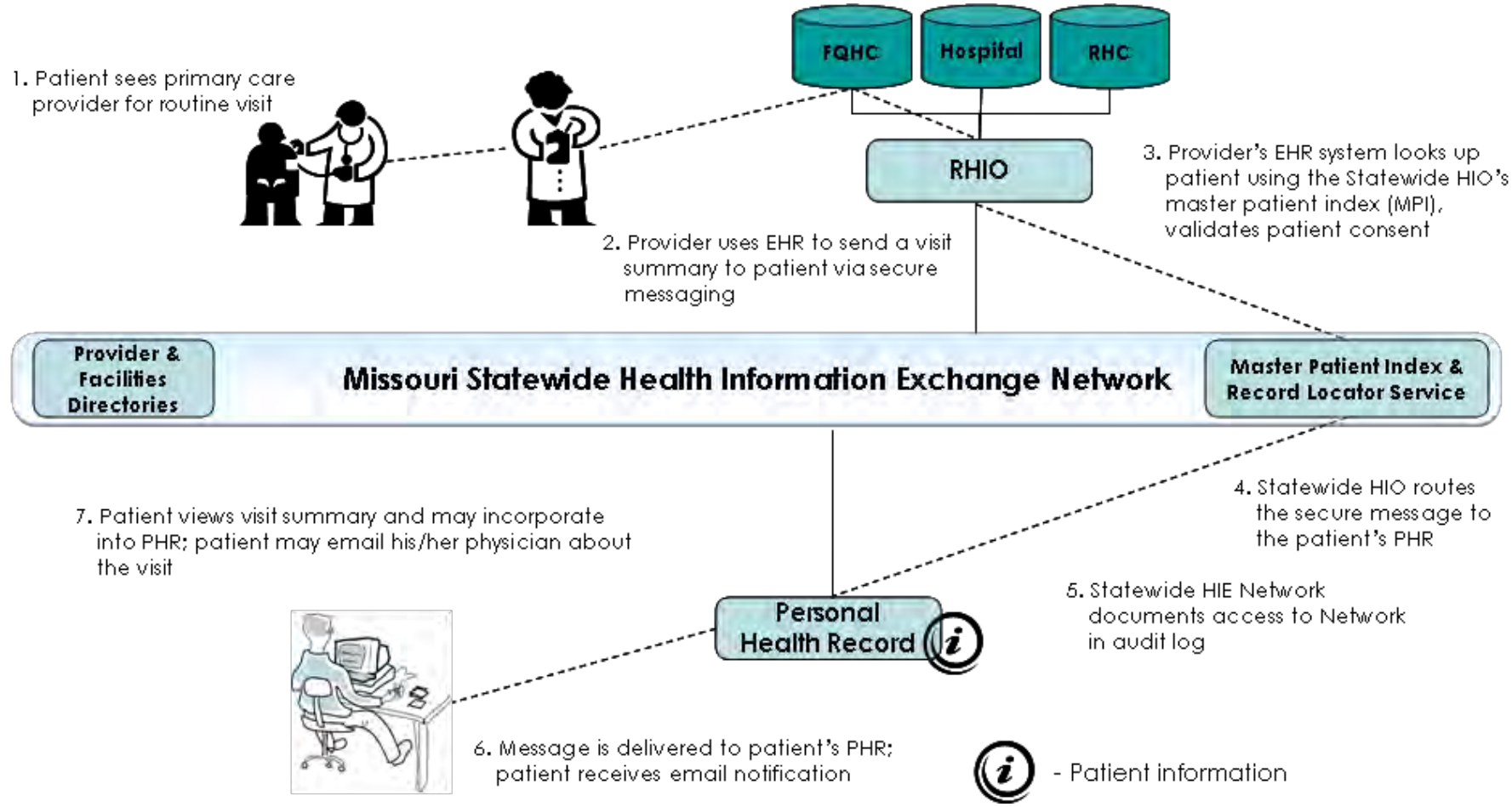
2. Retrieval of Patient Information (Pull)



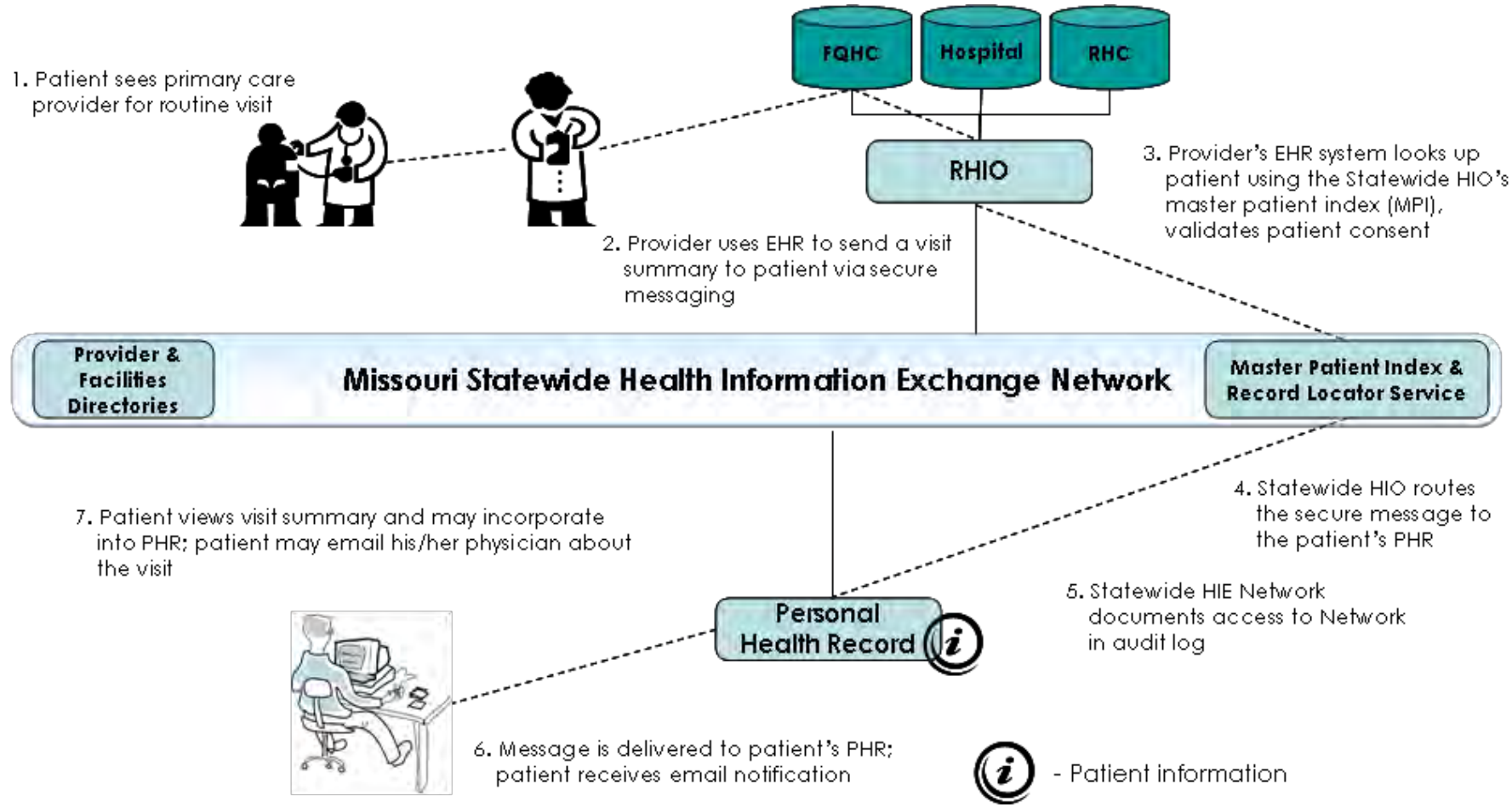
3. Laboratory Ordering and Results Delivery



4. Personal Health Record (Push)



5. Personal Health Record (Pull)



E. Articles of Incorporation

ARTICLES OF INCORPORATION

OF

[MISSOURI HEALTH INFORMATION ORGANIZATION]

a Missouri nonprofit corporation

The undersigned, being a natural person of the age of eighteen (18) years or more and a citizen of the United States, for the purpose of forming a corporation under The General Nonprofit Corporation Law of the State of Missouri, does hereby adopt the following Articles of Incorporation:

NAME OF ORGANIZATION

The name of the organization is **[Missouri Health Information Organization]** (the ~~O~~rganization").

PUBLIC BENEFIT CORPORATION

The Organization is a public benefit corporation.

REGISTERED AGENT

The address of its initial Registered Office in the State of Missouri is [_____], and the name of its initial Registered Agent at said address is [_____].

INCORPORATOR

The name and address of the Incorporator is as follows:

_____

MEMBERSHIP

The Organization shall not have members.

PURPOSES

The Organization is organized exclusively for charitable, educational and scientific purposes within the meaning of Sections 501(c)(3), 170(c)(2)(B), 2055(a)(2) and 2522(a)(2) of the Internal Revenue Code of 1986, as amended or the corresponding section of any future federal tax code (the ―Code"), including, for such purposes, the making of distributions to organizations that qualify as exempt organizations under Section 501(a) of the Code by reason of description in Section 501(c)(3) of the Code. The Organization's purposes shall include, but not be limited to, the promotion of public health and lessening the burdens of the government by improving the quality and outcomes of patient care empowering consumers to take a more active role in their own health care, and reducing health care costs through the establishment of a policy framework that will enable the creation and maintenance of an effective health information exchange infrastructure in the State of Missouri and, if so determined by the Board of Directors of the Organization, through the ownership and operation of elements of such infrastructure and the creation and offering of shared services to enable the secure and efficient exchange of clinical information to improve public health and patient care. To enable the Organization to carry out such purposes, it shall have the power to do any and all lawful acts and to engage in any and all lawful activities, directly or indirectly, alone or in conjunction with others, which may be necessary, proper or suitable for the attainment of any of the purposes for which the Organization is organized. These Articles shall not be altered, amended or repealed to change the Organization's purposes without the Governor of Missouri's prior approval.

PROHIBITED TRANSACTIONS

No part of the net earnings of the Organization shall inure to the benefit of, or be distributable to its directors, trustees, officers or other private persons within the meaning of Section 501(c)(3) of the Code, except that the Organization shall be authorized and empowered to pay reasonable compensation for services rendered and to make payments and distributions in furtherance of the purposes set forth in Article VI hereof.

No substantial part of the activities of the Organization shall be the carrying on of propaganda, or otherwise attempting to influence legislation, and the Organization shall not participate in or intervene in (including the publishing or distribution of statements) any political campaign on behalf of or in opposition to any candidate for public office, within the meaning of Section 501(c)(3) of the Code.

Notwithstanding any other provisions of these Articles, the Organization shall not carry on any other activities not permitted to be carried on (1) by a corporation exempt from federal income tax under Section 501(a) of the Code by reason of description in Section 501(c)(3) of the Code, or (2) by a corporation, contributions to which are deductible under Section 170(c)(2) of the Code.

BOARD OF DIRECTORS

The number of directors to constitute the initial Board of Directors shall be seventeen (17) individuals, as named by the Incorporator.

DURATION

The period of duration of the Organization is perpetual.

DISSOLUTION

Upon the dissolution of the Organization, the Board of Directors shall, after paying or making provisions for the payment of all of the liabilities of the Organization, distribute all of the assets of the Organization to an organization or organizations organized and operated exclusively for charitable, educational, or scientific purposes as shall at the time qualify as an exempt organization or organizations by reason of description in Section 501(c)(3) of the Code **[or to the State of Missouri or the Missouri Department of Social Services]**. Any of such assets not so disposed of shall be disposed of by the Circuit Court of the county in which the principal office of the Organization is then located, exclusively for such purposes or to such organization or organizations as said court shall determine, which are organized and operated exclusively for such purposes.

NO PERSONAL LIABILITY FOR CORPORATE DEBTS

Neither the directors nor the members, if any, of the Organization shall be individually or personally liable for the debts, liabilities or obligations of the Organization.

INDEMNIFICATION

The Organization will indemnify and protect any director, officer, employee or agent of the Organization, or any person who serves at the request of the Organization as a director, officer, employee, member, manager or agent of another corporation, partnership, limited liability company, joint venture, trust, employee benefit plan or other enterprise, to the fullest extent permitted by the laws of the State of Missouri.

In affirmation of the facts stated above, these Articles of Incorporation have been signed this ___ day of _____ 2010.

_____

_____, Incorporator

F. Bylaws

BYLAWS

OF

[MISSOURI HEALTH INFORMATION ORGANIZATION]

a Missouri Nonprofit Corporation

501(c)(3) Public Charity

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ARTICLE 1
PURPOSES AND LIMITATIONS

Organized efforts to build consensus around a governance strategy for a statewide health information exchange (~~"~~HIE") in Missouri began in the summer of 2009. Following the passage of the Health Information Technology for Economic and Clinical Health (~~"~~HITECH") Act with the 2009 Americans Recovery and Reinvestment Act (~~"~~ARRA"), Missouri Governor Jay Nixon signed Executive Order 09-27 (~~"~~Executive Order") creating the Missouri Office of Health Information Technology to promote the development and application of an effective health information technology (~~"~~IT") and HIE infrastructure for the State of Missouri. The Executive Order was signed recognizing the potential of health IT and HIE to improve the quality and reduce the cost of health care and promote the public health in Missouri. The State of Missouri has worked collaboratively with its stakeholders to develop a strategic plan to implement a statewide HIE and is committed to continuing to work with stakeholders to develop and implement an operational plan to support statewide HIE.

As a result of these efforts, the **[Missouri Health Information Organization]**, a Missouri nonprofit corporation (the ~~"~~Organization"), was organized by the filing of Articles of Incorporation on _____, 2010 (the ~~"~~Articles"), to serve as the statewide health information organization.

The Organization is organized exclusively for charitable, educational and scientific purposes within the meaning of Sections 501(c)(3), 170(c)(2)(B), 2055(a)(2) and 2522(a)(2) of the Internal Revenue Code of 1986, as amended or the corresponding section of any future federal tax code (the ~~"~~Code"), including, for such purposes, the making of distributions to organizations that qualify as exempt organizations under Section 501(a) of the Code by reason of description in Section 501(c)(3) of the Code. The Organization's purposes shall include, but not be limited to, the promotion of public health and lessening the burdens of the government by improving the quality and outcomes of patient care, empowering consumers to take a more active role in their own health care, and reducing health care costs through the establishment of a policy framework that will enable the creation and maintenance of an effective health information exchange infrastructure in the State of Missouri and, if so determined by the Board of Directors of the Organization (the ~~"~~Board"), through the ownership and operation of elements of such infrastructure and the creation and offering of shared services to enable the secure and efficient exchange of clinical information to improve public health and patient care. To enable the Organization to carry out such purposes, it shall have the power to do any and all lawful acts and to engage in any and all lawful activities, directly or indirectly, alone or in conjunction with others, which may be necessary, proper or suitable for the attainment of any of the purposes for which the Organization is organized.

The Organization is dedicated to utilizing health IT and HIE to:

- Improve the quality of medical decision-making and the coordination of care;
- Provide accountability in safeguarding the privacy and security of medical information;
- Reduce preventable medical errors and avoid duplication of treatment;
- Improve the public health;
- Enhance the affordability and value of health care; and
- Empower Missourians to take a more active role in their own health care.

To achieve its purposes, the Organization intends to carry out, among other things, the following strategic functions, all with the ultimate goal of improving patient care:

- Define clear and consistent goals for the Organization;
- Define and adopt business, technical, and operational policies that participants comply with as members of a self-regulatory organization;
- Act as the agent for distribution of state and federal funds for statewide HIE development;
- Ensure the availability of statewide technology services;
- Coordinate with Missouri's Regional Extension Center;
- Establish a business model for the Organization so that it is sustainable and self-financing; and
- Have the authority to ensure compliance, enforce policies and resolve disputes relating to participation in the Organization (and in compliance with national and state laws and regulations).

ARTICLE 2
MEMBERS

The Organization will not have members.

ARTICLE 3
BOARD OF DIRECTORS

General Powers

The affairs of the Organization will be managed by the Board.

NumberThe number of Directors on the Board will initially be seventeen (17), including voting and non-voting ex-officio Directors (as described in Section 3.5 hereof). The number of Directors may be changed from time to time by amendment of these Bylaws. No decrease in the number of Directors will have the effect of decreasing the term of any incumbent Director.

Election, Class and Term The initial term of the Directors named by the Incorporator of the Organization shall be one (1) year. Thereafter, the Directors will be nominated by the Nominating Committee, in accordance with Section 3.4 hereof, with the slate of nominees subject to the advice and consent of the Governor of Missouri, and subsequently stand for election by the Board as set forth in Section 3.4 hereof. In order to provide for staggered terms of office, the Directors will be equally divided, as evenly as possible, into three (3) classes with respect to the time for which they will severally hold office and stand for election. The terms of the Directors in the first class will expire with the annual election by the Board to be held in the year 2012, the terms of the Directors in the second class will expire with the annual election by the Board to be held in the year 2013, and the terms of the Directors in the third class will expire with the annual election by the Board to be held in the year 2014; provided that, in any event and irrespective of the expiration of their terms, the Directors of any class will remain in office until their successors have been elected and qualified. At each annual meeting of the Board thereafter, the Directors elected and qualified to succeed the Directors of any class will be elected for a term of three (3) years expiring with the annual meeting of the Board occurring the third year thereafter (provided that the Directors of any class will remain in office until their successors have been elected and qualified), so that the term of office of one class of Directors will expire each year. If the total number of Directors is changed, any increase or decrease in Directors will be apportioned among the classes so as to maintain all classes of Directors as nearly equal in number as possible, and any additional Director elected to any

class of Directors will hold office for a term which will expire with the term of the Directors in such class. Except as provided in Section 3.5 hereof, no Director shall serve more than two (2) consecutive terms, excluding any term less than three (3) years.

Nomination, Approval and Election of Directors When a vacancy arises on the Board or when the term of a Director is expiring, the Nominating Committee, as set forth in Section 4.3 hereof, shall submit not less than two nor more than three names of qualified candidates, in accordance with Section 3.6 and Section 4.3 hereof, for each vacancy to the Board. The Board will review the slate of nominees and may remove a nominee or nominees from the slate and nominate another candidate or candidates, or recommend an additional nominee, as the case may be, consistent with the provisions of these Bylaws. After the slate is finalized, the Board shall then submit the slate to the Governor of Missouri for the Governor's advice and consent. From the list of qualified candidates submitted to the Governor by the Board, the Governor shall return to the Board an approved slate of qualified candidates, if any. If the slate of approved candidates is less than the number of Director vacancies, then the Board, in consultation with the Nominating Committee, shall re-submit to the Governor additional qualified candidates in accordance with the provisions of this Section 3.4. This process will be repeated as necessary until all Board seats are filled. If the slate of approved candidates is equal to or greater than the Director vacancies, then the Board shall elect from this slate of candidates, at each annual meeting of the Board, Directors to fill each vacancy on the Board.

Ex-Officio Directors In addition to the Directors elected by the Board: (i) the Director of the Missouri Department of Social Services and the Director of the Missouri Department of Health and Senior Services will be ex-officio, voting members of the Board; and (ii) a representative appointed from the Missouri Health Information Technology Assistance Center, (which representative shall be subject to the approval by the Board) and the Director of the MO HealthNet Division, Department of Social Services will be ex-officio non-voting members of the Board.. Such ex-officio Directors are exempt from the two-consecutive term limit.

Board Composition At all times there should be representation of providers and ~~"c~~onsumer advocates" (as such term is hereinafter defined) on the Board. The Board should be broadly representative such that there is (a) ethnic, cultural, geographic, racial and gender diversity, and (b) no one industry group is disproportionately represented as the Board may determine from time to time, consistent with the purposes of the Organization. For purposes of these Bylaws, the term ~~"c~~onsumer advocate" shall mean an individual who is affiliated with a nonprofit mission oriented organization that represents a specific constituency of consumers or patients. ~~"C~~onsumer advocates" are distinguished from other stakeholders because they:

Do not typically have a financial stake in the healthcare system;
Are a trusted source of information in the community;
Speak from a global perspective and have experience representing the diverse needs and wants of consumers and patients;
Have networks to empower and mobilize the community (e.g., email lists websites, meetings, newsletters, and conferences) and share information and messages;
Have established relationships with the media, policymakers, and elected officials; and
Have a background in health care or an understanding of the health care system.

Annual and Regular Meetings The annual meeting of the Board will be held on the **[_____]** of each year, which meeting will be held for the purpose of electing Directors and for the transaction of such other business as may come before the meeting. If for any year the day fixed for the annual meeting is a legal holiday, such meeting will be held on the next succeeding business day. If the election of Directors is for any reason not held on the day designated herein for any annual meeting, or at an adjournment thereof, the Board will cause the election to be held at a special meeting as soon thereafter as conveniently possible. The Board may provide, by resolution, the time and place, at

an accessible place within the State of Missouri for the holding of regular meetings, other than the annual meeting, without notice other than such resolution.

Special Meetings Special meetings of the Board may be called by the Chairman of the Board or by any two Directors. The person or persons calling a special meeting of the Board may fix an accessible place within the State of Missouri, as the place for holding the special meeting of the Board called by them.

Notice; Waiver of Notice Notice to the Directors of a special meeting of the Board will be given at least five (5) days prior to the meeting and may be delivered personally, by mail, by facsimile transmission or e-mail, to the address, facsimile number or e-mail address for each Director as it appears on the records of the Organization. If mailed, such notice will be deemed to be delivered when deposited in the United States mail in a sealed envelope so addressed, with postage thereon prepaid. If sent by facsimile or e-mail, such notice will be deemed to be delivered when transmitted, with reasonable evidence of successful transmission. A Director may waive any notice required by these Bylaws, before or after the date and time stated in the notice, by written waiver signed by such Director, which waiver will be included in the minutes or filing with the corporate records. A Director‘s attendance at a meeting waives objection to lack of notice or defective notice of the meeting, unless the Director at the beginning of the meeting objects to holding the meeting or transacting business at the meeting because the meeting is not lawfully called or convened.

Quorum and VotingA majority of the Directors on the Board will constitute a quorum for the transaction of business at any meetings of the Board; provided that if less than a majority of the Directors are present at said meeting, a majority of the Directors present may adjourn the meeting from time to time without further notice. Each Director present will be entitled to one (1) vote upon each matter submitted to a vote at any such meeting.

Manner of Acting The act of the majority of the Directors present at a meeting of the Directors at which a quorum is present will be the act of the Board, except with respect to any action of the Board requiring a higher level of approval under the Missouri Nonprofit Corporation Act, as may from time to time be amended, the Articles, or with respect to the following acts, all of which will require the affirmative vote of a majority of Directors in office when the action is taken:

- Adopt a plan of merger, consolidation, or dissolution, or authorize the sale, lease, exchange or mortgage of all or substantially all the property or assets of the Organization;
- Elect, appoint or remove Directors or fill vacancies on the Board or on any of its committees;
- Consider any contract (i) between the Organization and the State of Missouri or (ii) with a value of greater than $100,000; or
- Recommend the adoption, amendment, or repeal of the Articles or these Bylaws.

Attendance by Telephone Conference or Similar Communications Equipment Directors may participate in a meeting of the Board by means of conference telephone or similar communications equipment whereby all persons participating in the meeting can hear each other, and participation in a meeting in this manner will constitute presence in person at the meeting.

Action by Unanimous Consent Any action, which is required to be or may be taken at a meeting of the Directors, may be taken without a meeting if consents in writing, setting forth the action so taken, are signed by all of the Directors. The consents will have the same force and effect as a unanimous vote at a meeting duly held.

Removal; Vacancies A Director elected by the Board may be removed with or without cause by a vote of two-thirds of the other Directors then in office. A vacancy on the Board occasioned by the death, incapacity, resignation or removal of a Director may be filled at any time by meeting of the Directors in accordance with the procedures set forth in Section 3.4 hereof for regular annual election of Directors. Any Director elected to fill a vacancy on the Board will serve a term expiring as of the scheduled expiration date of the term of his or her predecessor. Ex-officio Directors cannot be removed from the Board.

Compensation Directors as such will not receive any compensation for their services in any capacity. By resolution of the Board however, the Directors may be reimbursed for their expenses of attendance at meetings of the Board. However, ex-officio Directors shall not receive expense reimbursement from the Organization in any matter that would violate State law.

ARTICLE 4
COMMITTEES OF THE BOARD

Committees Generally The Board, by resolution adopted by a majority of the Directors in office, may designate one or more committees of the Board. The Board shall appoint members to serve on each committee, each of which will consist of two or more Directors. Each committee, to the extent provided in such resolution, will have and exercise the authority of the Board in the management of the Organization. Other committees not having and exercising the authority of the Board in the management of the Organization (i.e., advisory) may be designated by a resolution adopted by a majority of the Directors present at a meeting at which a quorum is present. The delegation of authority to any committee will not operate to relieve the Board or any member of the Board from any responsibility imposed by law. The Chairman, at the Chairman‘s discretion, may serve as an ex officio voting member of any committee.

Executive Committee The Board, by resolution adopted by a majority of the Directors in office, may designate and appoint an Executive Committee of two (2) or more Directors (and no non-Directors) in addition to the Chairman. The Chairman will serve as Chairman of the Executive Committee. The Executive Committee will possess and may exercise any and all powers of the Board in the management and affairs of the Organization provided that all actions of the Executive Committee will be subject to the paramount power of the Board and will not conflict with any expressed policies of the Board, except that the Executive Committee will not have the power or authority of the Board to engage in the following acts:

- Adopt a plan of merger, consolidation, or dissolution, or authorize the sale, lease, exchange or mortgage of all or substantially all the property or assets of the Organization;

- Elect, appoint or remove Directors or fill vacancies on the Board or on any of its committees;

- Consider any contract (i) between the Organization and the State of Missouri or (ii) with a value of greater than $100,000; or

- Recommend the adoption, amendment, or repeal of the Articles or these Bylaws.

The Executive Committee will keep a complete record of its activities and regularly report them to the Board at every meeting thereof. All action taken by the Executive Committee will be subject to revision, alteration or change by the Board.

Nominating Committee The Board, by resolution adopted by a majority of the Directors in office, shall designate and appoint a Nominating Committee of [____] or more Directors (and no non-Directors), from a list of Directors submitted to the Board by the Chairman. Directors up for re-election may not serve on the Nominating Committee. The Nominating Committee will be charged with nominating candidates as Directors, in accordance with Section 3.4 hereof, such that:

- The requirements of Article III of these Bylaws are met;

- Ethnic, cultural, geographic, racial and gender diversity are manifested in Board membership;

- Openness and transparency is achieved in the nominating process including through the solicitation of applications for nominations; and

- No one industry group is disproportionately represented as the Board may determine from time to time, consistent with the purposes of the Organization.

The Nominating Committee will keep a complete record of its activities and regularly report them to the Board at every meeting thereof. All action taken by the Nominating Committee will be subject to revision, alteration, or change by the Board as provided herein.

Finance/Audit Committee The Board, by resolution adopted by a majority of the Directors in office, may designate and appoint a Finance and/or Audit Committee consisting of at least three Directors. The Chairman of the Committee shall be the Treasurer of the Organization. A majority of its members shall be Directors. The purpose of the Finance/Audit Committee shall be to provide oversight of the financial affairs of the Organization, under the direction of the Board. The Committee shall recommend policies and standards to the Board to govern such financial affairs, monitor implementation of such policies, and recommend changes as necessary. The Finance/Audit Committee shall also provide for the proper management and investment of any fund established by the Organization, or other investments. The Committee shall also review and monitor the Organization‘s annual filing of Form 990, annual audit process, submit recommendations to the Board and perform or cause to have performed periodic audit testing to assure that the Organization is in compliance with generally accepted accounting principles. The Committee shall propose a Charter to the Board for the Board‘s approval.

AbsenceThe Board may designate one or more Directors as alternate members of any committee, who may replace any absent or disqualified member at any meeting of the committee. In the absence or disqualification of a member of a committee member, the other committee members present at any meeting and not disqualified from voting, whether or not such members constitute a quorum, may unanimously appoint another member of the Board to act at the meeting in the place of any such absent or disqualified member. A disqualified member is a committee member who has been removed pursuant

to the provisions of this Article or who no longer meets the qualifications required to serve on the committee.

Notice; Waiver of Notice Notices or Waivers of Notice for all regular or special meetings of any committee will be given in accordance with requirements for regular or special meetings, as applicable, of the entire Board.

RecordkeepingAll committees will, unless otherwise directed by the Board, keep regular minutes of the transactions at their meetings and will cause them to be recorded in books kept for that purpose in the office of the Organization and will report the same to the Board at its next meeting. The Secretary or an Assistant Secretary of the Organization may act as Secretary of the committee if the committee or the Board so requests.

Meetings by Conference Telephone or Similar Communications Equipment Members of a committee may participate in a meeting of the committee by means of conference telephone or similar communications equipment whereby all persons participating in the meeting can hear each other, and participation in a meeting in this manner will constitute presence in person at the meeting.

Committee Action Without a Meeting Any action which is required to be or may be taken at a meeting of any committee may be taken without a meeting if consents in writing, setting forth the action so taken, are signed by all of the members of the committee. The consents will have the same force and effect as a unanimous vote at a meeting duly held.

Term of Office Each committee member will continue to serve in such capacity for so long as he or she continues to meet the qualifications for membership on the committee (including, if applicable, membership on the Board), unless such committee member is sooner terminated, resigns or is removed from such committee by the Board.

ChairmanOne member of each committee will be appointed chairman of the committee as designated by the Board, except that the Chairman will serve as Chairman of the Executive Committee, and the Treasurer will serve as Chairman of the Finance/Audit Committee.

Removal; VacanciesA member of a committee may be removed with or without cause by action of the Board (excluding such committee member for purposes of such action, if applicable). A vacancy on a committee occasioned by the death, incapacity, resignation or removal of a committee member will be filled in accordance with the procedures for regular election or appointment of a committee member. Any committee member elected or appointed to fill a vacancy on a committee will serve a term expiring as of the scheduled expiration date of the term of his or her predecessor.

QuorumUnless otherwise provided in the resolution of the Board designating a committee, a majority of the whole committee will constitute a quorum and the act of a majority of the members present at a meeting at which a quorum is present will be the act of the committee.

Participation by Non-Directors Although a committee (other than the Executive Committee or the Nominating Committee) may permit a non-Director or other person who is not a member of the

committee to participate in a committee meeting, no person who is not a member of the committee will have any right to vote on any action taken by the committee.

RulesEach committee may adopt rules for its own governance not inconsistent with these Bylaws or with rules adopted by the Board.

ARTICLE 5
WORKGROUPS OR ADVISORY BODIES

Workgroups or Advisory Bodies Generally

In addition to committees, the Board, by resolution adopted by a majority of the Directors in office, may designate and appoint one or more workgroups comprised of subject matter experts to support the Board‘s activities and advisory bodies with general or specific duties as designated by the Board in its sole discretion. To ensure provider engagement in the development and operation of the Organization, the Board shall establish a provider advisory council through a workgroup or advisory body as the Board determines. The Board shall appoint all members to such workgroups or advisory bodies. Each workgroup or advisory body may be composed of non-Directors and shall have no voting rights or official authority to bind the Organization. The Board shall ensure provider engagement through Workgroups and/or Advisory Councils.

Consumer Advisory Council The Board, by resolution adopted by a majority of the Directors in office, shall designate a Consumer Advisory Council consisting of ~~-in~~individual consumers" (as such term is hereinafter defined) and consumer advocates (as defined in Section 3.6). The Consumer Advisory Council may submit names for possible Directors for consideration by the Nominating Committee and may make recommendations to the Board regarding consumer issues. For purposes of these Bylaws, the term ~~-in~~individual consumer" shall mean an individual who has significant personal experience with the healthcare system, either as a patient or family caregiver.

ARTICLE 6
OFFICERS

Elected Officers The elected officers of the Organization will be a Chairman, a Vice Chairman, a Secretary and a Treasurer. The Organization may also have such other officers, both active and honorary, as the Board may from time to time deem advisable. Such officers will be elected by the Board at its annual meeting, and they will hold office until their successors are elected at the next annual meeting of the Board and are elected and qualified, unless they earlier die, resign, or are removed from office. Any person may simultaneously hold more than one office.

Appointed Officers The Chairman may appoint, with the approval of the Board, such assistant secretaries and assistant treasurers as he may deem necessary or advisable.

Duties of Chairman The Chairman will preside at all meetings of the Board. He may execute all contracts, deeds and other instruments for and on behalf of the Organization and will do and perform all other things for and on behalf of the Organization as the Board will authorize and direct. He will enjoy and discharge generally such other and further rights, powers, privileges and duties as customarily relate and pertain to the office of Chairman.

Duties of Vice Chairman The Vice Chairman shall work in cooperation with the Chairman and shall perform such duties as the Board will authorize and direct. In the event of the death or during the absence, incapacity, or inability or refusal to act of the Chairman, the Vice Chairman shall be vested with all the powers and perform all the duties of the office of Chairman until the Board otherwise provides. He will enjoy and discharge generally such other and further rights, powers, privileges and duties as customarily relate and pertain to the office of Vice Chairman.

Duties of Secretary The Secretary will cause to be kept complete and correct minutes of all meetings of the Board. He will cause to be issued notices of all meetings in accordance with these Bylaws or as required by law.

When authorized and directed by the Board, he will execute with the Chairman all contracts, deeds, and other instruments for and on behalf of the Organization. The Secretary will be the legal custodian of all books, deeds, instruments, papers, and records of the Organization, the inspection of which will be permitted at all reasonable times by any Director or executive officer of the Organization.

The Secretary will attend to such correspondence as may be incidental to his office, and will perform all other duties and discharge all other responsibilities that customarily relate and pertain to the office of Secretary.

Duties of Treasurer The Treasurer will cause to be kept accurate and complete books and records of all receipts, disbursements, assets, liabilities, and financial transactions of the Organization.

The Treasurer will cause to be deposited all monies, securities, and other valuable effects of the Organization in such depositories as the Board will authorize and direct and, whenever requested to do so by the Chairman or the Board, will prepare and submit written statements, reports and accounts fully and accurately reflecting the assets, liabilities, and financial transactions and condition of the Organization.

The Treasurer will perform such other and further duties as the Board may from time to time direct, and he will perform all other duties and discharge all other responsibilities that customarily relate and pertain to the office of Treasurer.

The Treasurer will be released and discharged of all liabilities and responsibility for any monies, securities, and other assets of value committed by the Board to the custody of any person over whom he will have no direction or control.

Resignation and Removal Any officer of the Organization may resign by delivering a written resignation to the Organization at its principal office or to the Chairman or the Secretary. Such resignation will be effective upon receipt unless it is specified to be effective at some other time or upon the happening of some other event. If a resignation is made effective at a future date and the Organization accepts the future effective date, the Board may fill the pending vacancy before the effective date if the Board provides that the successor does not take office until the effective date. Any officer of the Organization may be removed from office by the Board with or without cause, but such removal will be without prejudice to the contract rights, if any, of the person so removed. Election or appointment of an officer does not in itself create contract rights.

VacanciesVacancies in any elected office occasioned by the death, resignation, or removal of any elected officer will be filled by the Board, and such person or persons elected to fill such vacancy or vacancies will serve for the unexpired term of his predecessor and until a successor is elected and qualified, or until such officer‘s earlier death, resignation or removal. Vacancies in any appointed office occasioned by the death, resignation, or removal of any appointed officer may be filled by the Chairman, and such person or persons appointed to fill such vacancy or vacancies will serve for the unexpired term of his predecessor and until a successor is elected and qualified, or until such officer‘s earlier death, resignation or removal.

ARTICLE 7
GENERAL PROVISIONS

PresidentFrom time to time, the Board, by a vote of a majority of the Directors in office, may delegate day-to-day operation of the Organization to a President and shall assign to such person such duties and responsibilities as the Board deems appropriate. Such person shall report directly to the Board and their performance shall be reviewed by the Board annually. Such person may receive reasonable compensation as payment for services rendered.

ContractsThe Board may authorize any officer or officers, agent or agents, to enter into any contract or execute and deliver any instrument in the name of and on behalf of the Organization, and such authority may be general or confined to specific instances. Notwithstanding the foregoing, unless otherwise limited by the Board, the Chairman of the Organization will have the power and authority to execute on behalf of and bind the Organization with respect to contracts in the ordinary course of the Organization‘s business and activities.

LoansNo loans may be contracted on behalf of the Organization and no evidences of indebtedness may be issued in its name unless authorized by the Board. Such authority may be general or confined to specific instances. The Organization is prohibited from making loans (excluding advances made for legal defense made pursuant to Article VIII) to its Directors or officers under any circumstances.

Checks, Drafts, etc All checks, drafts or other orders for the payment of money, notes or other evidences of indebtedness issued in the name of the Organization will be signed by such officer or officers, agent or agents of the Organization and in such manner as may from time to time be determined by the Board.

DepositsAll funds of the Organization will be deposited from time to time to the credit of the Organization in such banks, trust companies or other depositories as the Board may select.

CustodiansThe Board may from time to time designate a bank, trust company or depository as custodian of the funds and properties of the Organization, which custodian will maintain a record of all receipts, expenditures, income and expenses of the Organization and/or perform such ministerial duties as the Board by written direction may instruct. The custodian may receive fees for its services as may from time to time be agreed upon by the Board and the custodian.

Agents and Attorneys The Board may appoint such agents, attorneys and attorneys-in-fact of the Organization as it may deem proper, and may, by written power of attorney, authorize such agents, attorneys or attorneys-in-fact to represent it and for it and in its name, place and stead, and for its use and benefit to transact any and all business which said Organization is authorized to transact or do by the Articles, and in its name, place and stead, and as its corporate act and deed, to sign, acknowledge and execute any and all contracts and instruments, in writing necessary or convenient in the transaction of such business as fully to all intents and purposes as said Organization might or could do if it acted by and through its regularly elected and qualified officers.

Fiscal Year The Board will have the power to fix and from time to time change the fiscal year of the Organization. In the absence of contrary action by the Board, the fiscal year of the Organization will begin on the first day of January in each year and end on the last day of December in each year.

InterpretationThe terms ―include", "including" and similar terms shall be construed as if followed by the phrase ―without being limited to". The term ―or" has, except where otherwise indicated, the inclusive meaning represented by the phrase ―and/or." The words ―hereof," ―herein," ―hereby," ―hereunder," and similar terms in these Bylaws refer to this Bylaws as a whole and not to any particular provision or section of these Bylaws. The masculine gender, when used throughout these Bylaws, will be deemed to include the feminine.

Electronic Communications and Signatures Electronic communications, records and signatures may be used in connection with all matters contemplated by these Bylaws except to the extent prohibited by applicable law. Except as may be specifically set forth herein, the parties may use and rely upon electronic communications, records and signatures for all notices, waivers, consents, undertakings and other documents, communications or information of any type sent or received in connection with the matters contemplated by these Bylaws. An electronically transmitted (but not oral) document will be deemed to satisfy any requirement under these Bylaws or applicable law that such document be ―written", ―in writing" or the like. An electronic signature or electronically transmitted signature by any person on any document (properly authenticated) will be deemed to satisfy any requirement under these Bylaws or applicable law that such document be ―signed" or ―or executed" by such person. An electronic transmittal or communication (but not oral) of a document will constitute delivery of such document. Neither the Organization nor any Director may contest the authorization for, or validity or enforceability of, electronic records and electronic signatures, or the admissibility of copies thereof, under any applicable law relating to whether certain agreements, files or electronic records are to be in writing or signed by the party to be bound thereby.

Conflicts of Interest Policy The Board will adopt a Conflicts of Interest Policy to govern conflicts of interest situations that may arise from time to time among the Organization, Directors, and Organization employees, officers and agents.

Missouri Sunshine Law In order to ensure the Organization's goals of transparency, accountability and openness, the Organization shall comply with the principles of Mo. Rev. Stat. Chapter 610, as amended, and the regulations promulgated pursuant thereto (collectively, ―Chapter 610"), with

respect to the following areas: (1) meetings of the Board, advisory counsels, work groups or other committees of the Board and votes, actions and deliberations of such groups; (2) financial records; and (3) procurement processes including solicitations, bids and results, provided that no action of the Organization can be invalidated or enjoined for having failed to abide by the provisions of Chapter 610; and provided further that neither the Organization nor any of its Directors, officers, employees or agents shall be liable for any monetary damages or civil fines or other penalties for violation of Chapter 610.

ARTICLE 8
INDEMNIFICATION OF OFFICERS AND DIRECTORS

The Organization will indemnify and protect any Director, officer, employee or agent of the Organization, or any person who serves at the request of the Organization as a Director, officer, employee, member, manager or agent of another corporation, partnership, limited liability company, joint venture, trust, employee benefit plan or other enterprise, for any threatened or pending action, suit or proceeding, by reason of the fact that such person is or was serving in such capacity, against expenses, judgments, and amounts paid in settlement actually and reasonably incurred by such person in connection with such action, suit or proceeding, including attorneys fees, to the fullest extent permitted by the laws of the State of Missouri, provided that (a) such person acted in good faith and in a manner such person believed in, or not opposed to, the best interests of the Organization, and, with respect to any criminal proceeding, had no reasonable cause to believe such person‘s conduct was unlawful, (b) such person‘s conduct did not constitute gross negligence or willful or wanton misconduct, (c) such person did not breach the duty of loyalty to the Organization, and (d) such person did not receive any improper personal benefit with respect to the transaction at issue.

ARTICLE 9
PROPERTY DEVOTED TO CORPORATE PURPOSES

All income and properties of the Organization will be devoted exclusively to the purposes as provided in the Articles and these Bylaws. The Board may adopt such policies, regulations and procedures governing the management and/or disbursement of funds for such purposes as in its opinion are reasonably calculated to carry out such purposes as set forth in the Articles and these Bylaws.

ARTICLE 10
AMENDMENTS

These Bylaws may be altered, amended or repealed, and new Bylaws may be adopted, by the affirmative vote of a majority of all Directors then in office at a meeting of the Board called for that purpose except that the Articles and Bylaws shall not be altered, amended or repealed to change Article I (Purposes and Limitations), Section 3.3 (Election, Class and Term), Section 3.4 (Nomination, Approval and Election of Directors), Section 3.5 (Ex-Officio Directors), Section 3.6 (Board Composition), Section 3.11(a)(adopting a plan of merger, consolidation, or sale of property), Section 5.2 (Consumer Advisory Council) or Section 7.12 (Missouri Sunshine Law) hereof, without the Governor‘s prior approval.

[The remainder of this page is intentionally left blank.]

CERTIFICATION

The undersigned, being the Secretary of **[Missouri Health Information Organization]**, a Missouri nonprofit corporation, hereby certifies that the foregoing Bylaws are the duly adopted Bylaws of the Organization.

Effective Date:_____

_____
Name:_____
Title: Secretary

G. Statewide HIO Board Nomination Form

Missouri Office of Health Information Technology (MO-HITECH)
Missouri Health Information Organization Board of Directors – Nomination Form

Overview
The Missouri Health Information Organization (HIO) will be a Missouri nonprofit corporation with the mission to support and facilitate statewide health information exchange (HIE) to:

- Improve the quality of medical decision-making and the coordination of care;
- Provide accountability in safeguarding the privacy and security of medical information;
- Reduce preventable medical errors and avoid duplication of treatment;
- Improve the public health;
- Enhance the affordability and value of health care; and
- Empower Missourians to take a more active role in their own health care.

The Organization is being formed as the result of a collaborative consensus-building effort to develop a statewide strategy for HIE in Missouri that began in the Summer of 2009. Following the passage of the HITECH Act, Missouri Governor Jay Nixon signed Executive Order 09-27, creating the Missouri Office of Health Information Technology (MO-HITECH); MO-HITECH and the State of Missouri have since worked collaboratively with stakeholders to develop Strategic and Operational Plans to support statewide HIE.

To achieve its mission, the Missouri HIO will oversee the following strategic functions:

- Define clear and consistent goals for the organization;
- Act as the agent for distribution of state and federal funds for statewide HIE development;
- Ensure the availability of statewide technology services;
- Coordinate with Missouri's Regional Extension Center;
- Establish a business model for the organization so that it may be sustainable and self-financing; and
- Ensure compliance, enforce policies, and resolved disputes relating to participation in the organization (in compliance with state and federal laws and regulations).

Nominating Process & Board Overview
MO-HITECH is seeking nominations of persons to serve on the Missouri HIO Board of Directors (the ~~B~~Board"). A Nominating Committee of knowledgeable stakeholders has been convened by the MO-HITECH Governance Workgroup Co-Chairs, Steve Roling, President & CEO, Health Care Foundation of Greater Kansas City, and Ronald Levy, Director, Missouri Department of Social Services and Health IT Coordinator for the State of Missouri, to oversee the nominating process for the Board.

As described in the draft Bylaws[21] of the Missouri HIO, the Board will initially consist of seventeen Directors, including two ex-officio voting Directors (Directors of the Department of Social Services and the Department of Health and Senior Services). The initial term of the Board will be one year and thereafter Directors will be evenly divided into three classes of one, two, and three year terms. No Director, excluding ex-officio voting Directors, shall serve more than two consecutive terms, excluding any term less than three years. Directors elected for the initial term of the Board will not be precluded from future service on the Board.

Nomination Criteria

[21] The draft Bylaws will be finalized before the election of the Board; the draft Bylaws are available online at http://dss.mo.gov/hie/leadership/governance/meetings.shtml.

As described in the draft Bylaws of the Missouri HIO, the Board should be broadly representative of Missourians and exhibit ethnic, cultural, geographic, racial, and gender diversity; at all times providers and consumer advocates must be represented on the Board.

Board members will be selected based upon leadership experience, background, and ability to oversee the start-up of the new organization and implement the Strategic and Operational Plans; perspective and knowledge of HIE; and diversity and balance among multiple stakeholder categories.

Nominations should include business, industry, and health care thought leaders, representing: health care providers, including physicians, health systems and hospitals, public health, behavioral and mental health, and safety net providers; consumer advocates and patients; employers and insurers; legal and health IT experts; and other current and future stakeholders in Missouri's health care delivery system.

I, _____, nominate the following person to serve on the Missouri HIO Board of Directors:

Name_____

Organization _____

Title_____

Phone Number _____ Email _____

Zip Code &/or County of Personal Residence_____

Please provide a description of how this nominee could provide value to the Board of Directors and meet Board nomination criteria. Please provide the nominee's CV or resume.

To ensure consideration, nominations must be received by Charlotte Krebs at ckrebs@primaris.org or 573 424-9174 by April 23, 2010 at 5:00 pm CDT. Nominations will continue to be accepted until the full Board is assembled.

H. HIO Board of Directors

	Nominee	Organization	Title	MO-HITECH Advisory Board	Location			Representation / Experience															
					Kansas City	Out-State	St. Louis	Hospital / Health System	FQHC / RHC / Clinic	Provider	Public Health	Behavioral Health	Association	Foundation	Consumer	Academic	Legal	Business Leader	Informatics / Tech	RHIO / HIE	Employer	Payer
HIO Board Member Recommendations																							
1	Bluford, John	Truman Medical Center	President & CEO		X			X															
2	Day, Kim	Sisters of Mercy Health System	Sr. VP, Regional Markets (Springfield,			X		X															
3	Fitzmaurice, MD, Laura	Children's Mercy Hospital	Chief Medical		X			X		X										X			
4	Glover, Craig	Grace Hill Health Centers	VP, Compliance and Health				X		X										X	X			
5	Godfrey, MD, Tracy	Family Health Center	Family Physician (in	X		X			X	X													
6	Johnsen, Melissa	Former Business	Private Citizen				X											X	X				
7	Johnson, JD, Sandra	St. Louis University Law School	Emerita Professor of Law & Ethics	X			X								X	X	X						
8	Kuhn, Herb	MO Hospital Association	President & CEO	X		X		X					X										
9	Roling, Steve	Healthcare Foundation of Greater Kansas City	President & CEO		X									X									
10	Routh , Andrea	MO Health Advocacy	Executive Director	X		X									X								
11	Walli, Steve	United HealthCare	President & CEO	X			X																X
12	Weiss, David	BJC Healthcare	Sr. VP and CIO	X			X	X											X				
13	Wilson, PhD, Karl	Crider Health Center	President & CEO	X		X			X			X											
			Total:	7	3	5	5	5	3	2	0	1	1	1	2	1	1	1	3	2	0	1
Ex-Officio Voting Members																							
14	Donnelly, Margaret	MO Department of Health and Senior Services	Director	X																			
15	Levy, Ronald	MO Department of Social Services	Director	X																			
Ex-Officio Non-Voting Members																							
16	Edison, MD Karen	MO HIT Assistance	Co-Principal	X																			
17	McCaslin, MD, Ian	MO HealthNet Division (Medicaid)	Director	X																			

I. MO-HITECH Request for Information

Missouri Office of Health Information Technology (MO-HITECH)
Request for Information

March 25, 2010

Contact Information:

George Oestreich
MO HealthNet Division
Deptartment of Social Services
George.L.Oestreich@dss.mo.gov
T 573.751.6961

F 573.522.8514

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Goals and Objectives

Missouri's broad objectives are to:

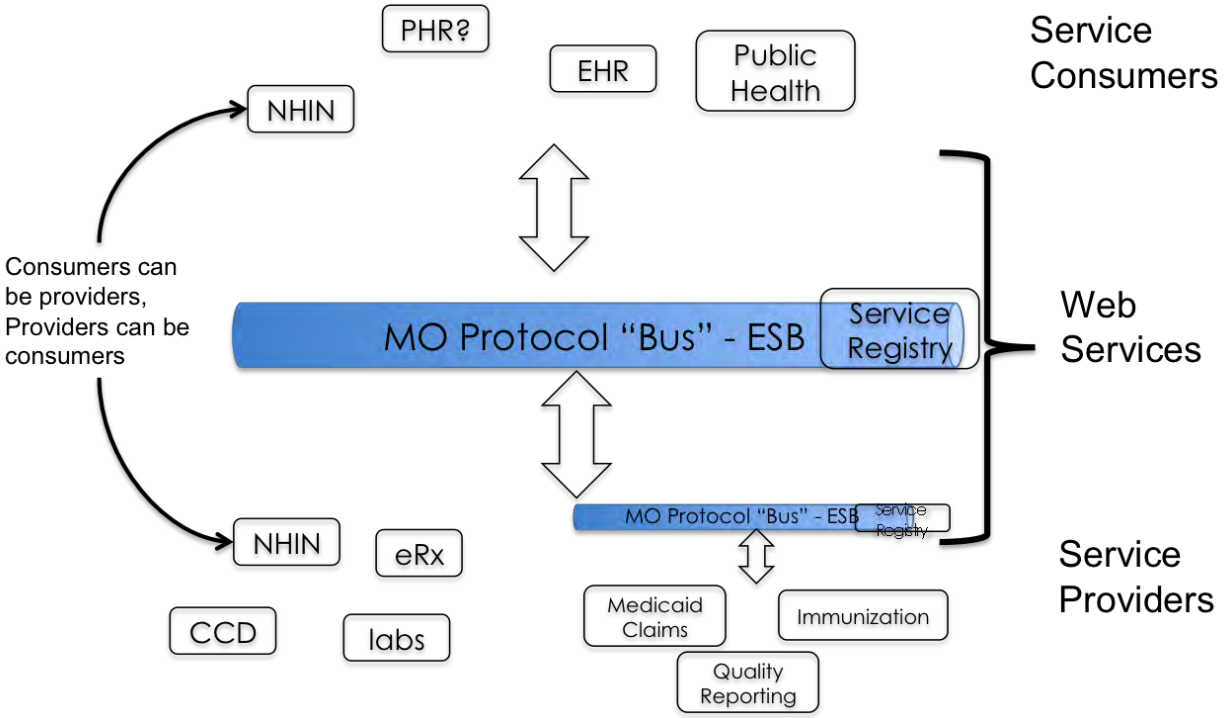
- Support providers' ability to satisfy Meaningful Use criteria (step wise through all phases)
- Lay the basis for robust clinical exchange of information between all stakeholders in Missouri to improve patient care
- Ensure the capability to enable connectivity with an Nationwide Health Information Network (NHIN) gateway or NHIN Direct

The goal for this effort is to obtain information regarding component functions and general pricing ranges, so that we may consider various models based on our desired functionality and our available budget. To place this in context, the current request for information (RFI) is an initial step in Missouri's planning process and may be followed by a request for proposal (RFP) for contracting with a partner to build a statewide HIE platform; the current RFI is independent of any future RFP and will not obligate or affect a respondent's ability to respond to nor impact the evaluation of their response to a future RFP. This RFI is intended to obtain market information on functional capability and general component pricing; information obtained through the process will be shared with the Missouri Office of Health Information Technology (MO-HITECH) collaborative stakeholder process as it works toward a final agreement on functionality while taking into account MO-HITECH's strategic goals, operational plan and available resources.

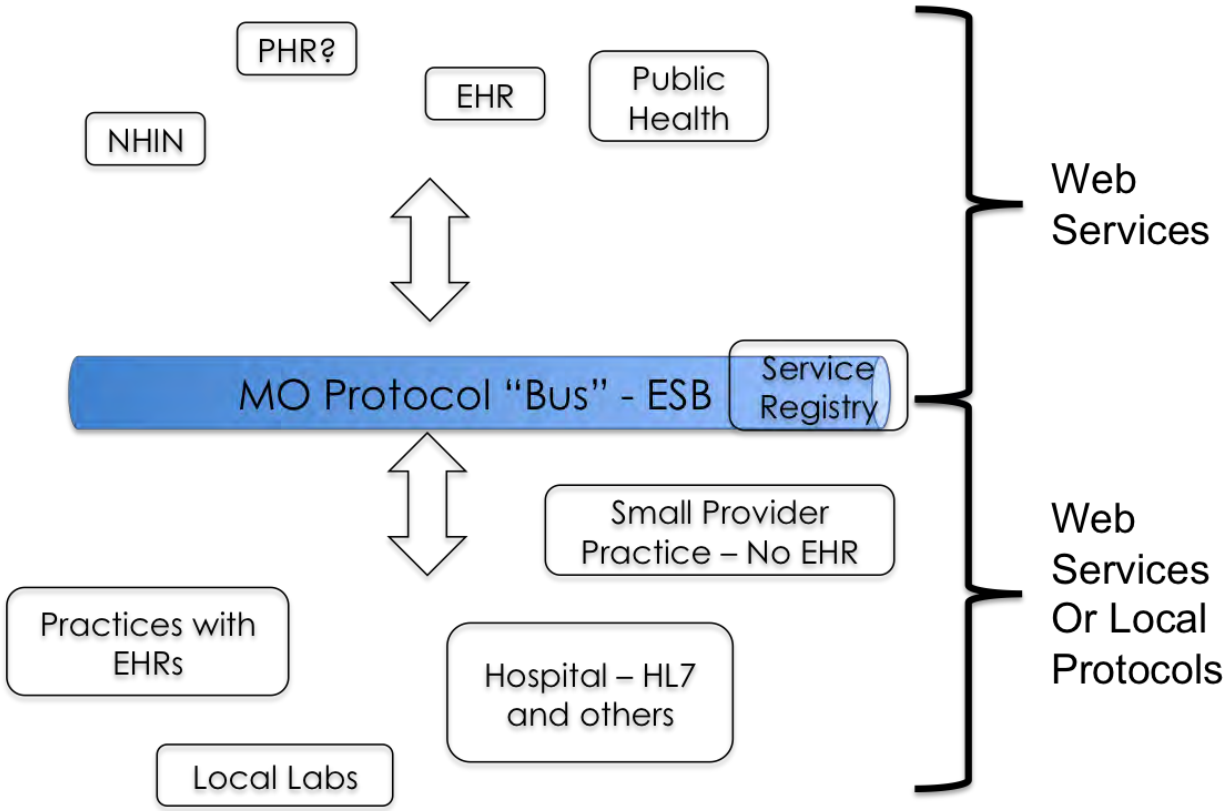
It is hoped the proposed architectural approach will be familiar to respondents. The intent is to build the network using service oriented architecture (SOA) principles, and to describe the desired clinical service capabilities in terms of web service components to the extent possible. The respondents should indicate both the components they can supply and generally how they would price these components.

The proposed network architecture is composed of hubs that communicate using the NHIN messaging platform and other market accepted health information exchange protocols as they become available. The plan is to build a Statewide Health Information Organization (HIO) that will serve as the nexus of these hubs, capable of routing messages among all providers and also to consumers, and orchestrating messages according to business rules needed to deliver meaningful use functions. The Statewide HIO will also facilitate connectivity to the Statewide HIO for providers unaffiliated with an HIO or hub and subsequently lacking an "on-ramp" to the statewide network, in support of a fundamental MO-HITECH principle: "No Provider Left Behind." Therefore, the request is for pricing around these two types of connectivity for the Statewide HIO:

Connecting hubs using uniform, standard protocols from the NHIN or other widely accepted messaging platform(s). In the diagram below this means implementing the "MO Protocol Bus" and providing the service registry for statewide HIE services. Other hubs would query the registry to find endpoint services when making requests, and could also be service providers with entries in the registry. Note that the State Government is constructing an ESB to expose State Services. An important function of the Statewide HIO implementation will involve working closing with the State government to connect this ESB to the statewide network. Translation of formats and other meditation of service requests is also under consideration.



Connecting providers directly to the Statewide HIO. This is the function that current implementations of HIE often provide as depicted in the figure below: connecting various systems from providers and other resources and bridging to a standard web services interface to integrate into the larger statewide and national health information network.



Below is a brief description of clinical service requirements followed by assertions of required underlying functionality. Respondents should address whether they can provide the asserted functionality or offer alternatives. Respondents may also offer alternative models for the clinical service capabilities. Please note that these services are intended to serve as a foundation for future/additional health information exchange (HIE) services including: quality reporting, public health reporting, clinical decision support, clinical surveillance, and patient self-management. As part of the RFI response, please indicate how your approach satisfies the clinical service requirements, while also laying the foundation for future HIE services.

A respondent is expected to describe a single, complete solution; please indicate if your response requires collaboration with or inclusion of additional partner(s), as well as if you currently have formal relationships with contemplated partner(s). We encourage potential respondents with component solutions to respond in partnerships that offer a complete solution.

Clinical Functional Service Requirements

The clinical functional service requirements are:

Push and pull lab orders and results to Missouri providers for integration into EHRs. The respondent must integrate with labs, lab hubs, or other sources of leveraged laboratory connections, receive digital laboratory results (PDF versions are not acceptable) and route those results to provider systems; laboratory ordering capabilities are also desirable.

- Integration with labs via HL7 2.5 or similar interface (such as via HITSP or NHIN constructs).
- LOINC coding/translation of results if necessary.
- Bi-directional interface to reference labs.

Provide connectivity to multiple sources of medication history, formulary, and eligibility, and respond to queries from providers for such information. Provide a statewide interface for e-prescribing transactions for providers with EHRs.

- Connect to Surescripts and application e-prescribing networks
- Connect to Missouri State enterprise service bus (ESB) for medication history from government systems.
- Provide connectivity and query response capabilities to provider EHRs based on NHIN messaging platform or other broadly accepted standard protocols. Optionally provide ESB mediation to enable connectivity using NCPDP or SOAP.
- Service to enable new connections to new sources of medication history that arise, such as hospitals, outpatient surgical centers, and outpatient treatment facilities.
- Bidirectional interface to personal health records (PHRs) (e.g. Google Health, Microsoft HealthVault). It is desirable to obtain specific patient medication history for medications personally obtained including those classified by the Food and Drug Administration as food and herbals.

Clinical Information Exchange

Enable members of the Statewide HIO to exchange key clinical information between their EHR systems.

- Accept and route CCD and/or CCR payloads between any providers connected.

- Optionally provide ESB mediation to enable translation or aggregation between proprietary formats and CCD or CCR formats.

- Endpoint system interoperability (e.g. delivery to EHRs, PHRs, or other systems).

Eligibility and Authorization Unification

Provide a single point of connectivity to all payers in Missouri via multi-payer portal or other means to enable day certain eligibility transactions (including authorization) from a provider to any payers within their practice area.

- Connect to all payers in Missouri and enable conducting eligibility transactions by 270/271 transactions or equivalent allowing day certain eligibility determinations.

- Route eligibility requests from provider EHRs and/or practice management systems to appropriate payers and return results to provider EHRs and/or practice management systems, accounting, and/or billing subprograms.

Web Viewers for Providers Without EHRs

Provide EHR alternative viewing capability for all clinical services; this should require only standard web browsers. Close to full EHR functionality is desirable, but the critical requirement is to enable providers without EHRs full access to clinical service functions.

Value-Added Services (optional)

While this RFI is focused on the immediate needs and initial clinical services, the vision for transforming Missouri healthcare is based on moving toward patient centered models involving robust coordination of care. Further, there is broad interest in certain specific capabilities and we are requesting you to describe your ability to provide them:

- **Radiological image exchange**, including management of storage and caching of images, DICOM support and ability to provide ~~"v~~iewers" for clinician display. If you have worked with or have partnerships with PACS please include a brief description.
- **Population-based health management and reporting**, including psuedonimization, support for ~~"d~~ata marts" and reporting and display capabilities.
- **End user integration experience**. The architecture is vendor agnostic and intended to integrate with multiple systems for display of clinical information. Please describe your experience with end user systems including EHR's and your own end user functionality if applicable.
- **Integration with provider workflow**. Please describe any significant capabilities, experience or partnerships enabling clinical workflow integration, including messaging, rules and alerts.
- Beyond these specific items, please describe – briefly - your experience with; patient centered medical homes; clinical decision support; gaps in therapy; deviation from best practices; predictive analysis; integration with home monitoring (including but not limited to device integration); and other capabilities supporting advanced clinical care models.

Core HIE Service Requirements

The core HIE service requirements are:

Patient Registry

The proposed design calls for a federated patient registry, linking together registries from the various hubs on the network and also providing the capacity to serve as a hub registry for providers unaffiliated with another hub. Functionally, this is often referred to as an MPI/RLS, enabling matching and location of patient information anywhere in the network.

Provider Registry

The proposed design calls for a federated provider registry, linking together provider registries from the various hubs on the network and providing the capacity for one where one is needed. Similar to a patient registry service, search, create, update, and archive functions are to be supported.

Organization Registry

The proposed design calls for a federated organization registry, linking together organizational registries from the various hubs on the network. The provider registry and the organization registry must be cross-linked so that affiliations between providers and organizations are represented. The organization registry should also be able to provide a unique identifier capturing the organizational information including any systems and system meta-data that are used to connect to the network.

Consent Registry

Based on the access consent policy that Missouri utilizes, patient consent policies need to be linked and accessible in order to operate in an NHIN exchange model. These consent policies should provide a consistent source of a consumer‘s preferences, thereby enabling patient engagement and provider access to clinical information. The registry should be able to connect to existing consent registries and provide a consent registry if one is not available.

Web Services Registry (UDDI)

The Statewide HIO provides the registry containing endpoints for statewide Web services, stored in an NHIN compatible registry. The registry is able to point to other HIO registries or serve as the main lookup vehicle for any endpoints and nodes across the network.

Web Services Endpoints and Messaging (Service Bus)

The Statewide HIO must implement Web Services, enabling service consumers to connect to endpoints in the Services Registry, and also manage administration such as registering service providers and service consumers. Additionally, the service bus should be able to reliably store, forward, aggregate, and pull from any service endpoints that are dynamically available or contained within the services registry.

Integration and Message Transformation

The Statewide HIO should provide orchestration/integration to enable simpler, integrated responses to complex requests from service consumers. Message transformation in and out of various formats should also be provided, for example from X12 EDI formats to Web services/SOAP formats. As other communication or object access models arise (such as REST-ful web services), the Statewide HIO should also be able to connect and utilize any emerging health exchange standards or protocols.

Integrated Healthcare Enterprise (IHE) Profile Support (PIX Manager, XDS Registry, XDS Repository, etc.)

Support for the NHIN messaging platform generally requires support for various IHE profiles, specifically the use of PIX/PDQ for patient identification and the use of XDS profiles for document indexing and retrieval; in addition, please describe the use of cross community profiles including XC.

Role Based Access and Management

Required for security and authorization as described in the NHIN messaging platform and may require additional specificity to meet Missouri or Statewide HIO privacy and security policies. The intersection of user roles as defined by the user directory and trust models in the proposed solution should be provided.

Terminology Management (HITSP C83 / C80 Support)

This is also required to enable uniform transport of the CCDs. As many existing interfaces are not compliant with the terminology standards described in the existing HITSP specifications, your solutions should clearly describe how it would handle the challenge of semantic interoperability between systems.

Message and Data Validation

The Statewide HIO should be able to examine messages for both structural and format validation. Additionally, it should support notification and any data correction processes that may be necessary for the HIE functions the solution supports. For example, claims transactions have specific requirements based on the receiving system.

System Administration

Standard administration services such as user provisioning, security and access control, Services Registry administration, etc. Additionally, system administration should provide tools to address reliability, availability and serviceability factors including upgrade paths, scaling, backwards compatibility and associated functions based on the specific HIE functions.

System Configuration

Standard configuration tasks such as installation, server setup, synchronization for redundancy, and system configurations should be clearly addressed in the response. Please be clear which components can be configured and how the configuration is performed (e.g. configuration file, user interface, and programmatically). Describe the production and performance impact when the system is reconfigured.

Privacy

The system should support the privacy of protected health information according to HIPAA, relevant state laws and applicable policies. Describe how your system protects enables and enforces patient privacy. Describe both the controls your solution provides and any procedures you would recommend to protect patient protected health information.

Security

Describe your solution‘s support for the ~~F~~our A‘s”: authentication, authorization, access, audit. Please describe how your solution supports messaging, system, and network security protocols. Also, please describe how your system supports immutability of audit entries as it relates to access and disclosure of patient health information (PHI). Include a description of how your system supports and/or provides two-factor authentication.

Logging

Describe the levels and your solution‘s logging of transactions and transaction types including but not limited to:

- NHIN / HHS standards
- IHE auditable events
- Debugging or event tracing

Monitoring

Describe your solution‘s support for internal system monitoring, load balancing and network monitoring of services availability. Additionally, describe any operational, business-driven, reliability, availability and serviceability monitoring that is provided. Describe any specialized rules or methods that your solution provides to detect unusual clinical, access, or other HIE functional events based on the clinical services. Examples include specialized rules your system utilizes to detect clinical gaps in care, drug seeking or shopping behavior, or other surveillance type functions based on the transactions traversing the network.

Reporting

Describe your solution‘s support for operational, audit trail, and management reports, including but not limited to:

- Access metrics
- Usage metrics
- Consent adherence
- Transactions
- Ad hoc reporting

Describe the parameters that your solution supports for reporting generation and customization.

Disclaimers

The pricing information provided in the current information request will inform the ongoing development of MO-HITECH's technical approach and project scope, including feasibility in terms of participants, number of providers, scope of development, and HIE services to be implemented.

Requirements for full scale statewide deployment of health information exchange and services are not currently available.

Project budget: Overall project budget will be determined based on the component pricing presented and the feasibility of moving forward.

Demonstrations: While the RFI process does not require a demonstration, respondents may be asked to demonstrate one of their proposed solutions if there are questions from reviewing the response.

Questions and Answers: All submissions, questions and answers related to this RFI will be subject to Missouri's Sunshine Law and will be shared upon request; questions and answers relevant to all respondents will be made publicly available on the MO-HITECH website.

Dates

Responses must be submitted to MO-HITECH on or before 8:00 AM CDT on Friday, April 16th.

RFI Event	Target RFI Date(s)
MO-HITECH releases RFI	March 26th
MO-HITECH provides webinar on RFI to potential respondents	March 31st, 11:00 am – 12:30 pm CDT Event address: https://manattevents.webex.com/manattevents/onstage/g.php?t=a&d=935014609 Event password: Missouri Event number: 935 014 609 Teleconference: 866-699-3239 / Access Code: 935 014 609
Intent to respond due via email *Please email* George.L.Oestreich@dss.mo.gov	April 2nd
Responses due *Please send responses to* George.L.Oestreich@dss.mo.gov	April 16th by 8:00 am CDT

Respondents are welcome to submit questions to George.L.Oestreich@dss.mo.gov throughout the RFI process up until 5:00 pm CDT on Wednesday, April 14th. Questions that are relevant or may be helpful to other respondents will be posted anonymously to the MO-HITECH website.

Instructions

Please complete the section labeled as RFI Application. Follow any instructions for each section and provide clear and detailed responses to the questions. Responses which are incomplete run the risk of not being considered. If you are collaborating with other organizations to complete the application, please be clear which organization is providing various components of the overall proposal. The reviewers value concise and clear solutions that confirm the respondents' understanding of the problem.

Please note the following:

The total response should not exceed a total of 30 pages; the response should be formatted using Arial font, size 10, with no less than one inch margins.

Questions should be sent to George.L.Oestreich@dss.mo.gov up until 5:00 pm CDT on Wednesday, April 14th.

Terms and conditions

MO-HITECH is subject to strict accountability, reporting requirements, and State law as a recipient of funds from public sources. Any response or other information submitted by a respondent is subject to disclosure as required by law, including but not limited to, the America Recovery and Reinvestment Act of 2009 (Public Law 111-5).

MO-HITECH is not responsible for any costs incurred in preparing or delivering this response or any other activities related to this RFI.

MO-HITECH reserves the right to:

- Copy the response to facilitate review or use the information;
- Use ideas or adaptations of ideas presented in the response;
- Reject any and all responses, or cancel the RFI;
- Correct any defect or irregularities in this RFI;
- Request modifications to any response to this RFI;
- Modify any specifications, scope or requirements in this RFI; and
- Extend or change deadlines.

Reference Documents

The following reference documents are included to provide context for respondents to this RFI.

- MO-HITECH Strategic Plan - http://www.dss.mo.gov/hie/action/
- MO-HITECH Workgroup Materials (see Technical Infrastructure and Business & Technical Operations) - http://www.dss.mo.gov/hie/leadership
- Technical Infrastructure Workgroup - See February 23rd Materials http://dss.mo.gov/hie/leadership/tech/meetings.shtml

RFI Application

Cover Letter

Please provide a cover letter on the prime organization's letterhead. This cover letter should be signed by a representative of the respondent(s).

Executive Summary

Please provide an overall summary of your proposed solution. Include a description of all contracting relationships, technical approach, cost model, and timeline.

Organization Information

(Please limit this portion of your 30 page response to ten pages or less)

If your response requires the collaboration with or inclusion of additional partner(s), that should be stated. If you have current formal relationships with contemplated partner(s) that too should be stated. The intent is to have a single inclusive and complete solution proposed from a single responsible lead entity.

- Please provide the contact information of the person who is responsible for any questions related to the RFI response.
- Briefly describe each organization and its history in offering and developing the proposed HIE services, products or solutions.
- Provide relevant strategic, technical, financial, and operational roadmaps and plans as related to the proposed solution for each organization included in the proposed solution; please provide such information for the a) the next 0 – 6 months; b) the next 6 – 12 months; c) beyond 12 months.
- Describe any and all healthcare standards bodies or statewide implementation efforts that your organizations have contributed towards. Examples include: HITSP, NHIN CONNECT, CCHIT.
- Please provide a list of all 3rd party contracted relationships and a description of the relationship as related to the proposed solution.

Proposed Solution

Please provide a summary of your proposed solution including the names of products and version/ release you are proposing to use. Provide an overall technical architecture description and diagram that shows all proposed components and how they related to each other. Include a high level technical and functional view of the solution and how it meets the required clinical functions and associated supporting core services.

Please provide a breakdown of your proposed solution by core and functional services as listed in the goals and objectives section. Describe what functions your solution provides as well as how it technically enables that function. Reviewers should be able to clearly understand the technical aspects for each component and how it is constructed. For the overall solution and each service, cover the following aspects:

- Technical architectural pattern and approach
- Product Name and Version for which the function is or will be available
- Number of years / months for which the function has been in production and supported
- CCHIT certification if applicable
- Healthcare standards supported for the functional component (please list all applicable, and if there are many, how they relate to each other). Also, be specific. For example, if you support CCDs and HITSP C32, list out which components and modules and provide examples
- Healthcare vocabularies supported – address how your system supports translation to specified standards to achieve semantic interoperability
- NHIN capabilities (please distinguish between NHIN gateway, NHIN Direct, and/or other NHIN capabilities)
- Sequence diagram(s) if appropriate for the function or across functions
- Relationships to other services or functions
- How the component can be configured, extended or modified
- Screenshots and examples of the described functionality

Please provide a breakdown and description of how your proposed solution supports non-functional requirements. These include:

- Software bug tracking
- Availability
- Testing
- Performance
- Failover
- Disaster Recovery
- Service Level Monitoring
- Pattern for scaling – vertical vs. horizontal, etc.

Implementation Approach, Timing and Staffing

- Please provide a high level but comprehensive plan containing the tasks, timing, effort, resources and dependencies for you to design, develop and deploy the proposed solution.

- Please provide your project management method, approach and tools. Include samples.

- Please describe your change control and risk management processes and tools. Include samples.

- Describe staffing required to design, develop, deploy and operate the proposed solutions

- Please estimate the number of providers that the solution can realistically be deployed to over a four year project period.

Pricing Information

Please keep in mind the model articulated in our Goals and Objectives. There are two styles of connection in mind: connections between hubs based on the NHIN messaging platform and/or similar widely adopted protocols and serving as a hub enabling connections by providers. Hybrid models that support both federated and centralized data structures may also be proposed.

- Provide a pricing model that enables the reviewers to develop a cost model for prototyping your proposed solution with a limited but cross-sectional representation of key stakeholders. Please be as specific as possible. This should include fixed and variable costs for the following:

- All technical services (functional, core and non-functional)
- Implementation

- Please use the sample metrics below in developing a prototype costing model. The prototype parameters should be used in developing the model requested. Please keep in mind that we are interested in understanding pricing models as much as total costs.

- Please advise how the model changes if we were to try and scale this to additional HIOs and the rest of the state. Please refer to the strategic plan for an understanding of the MO-HITECH landscape and existing organizations. For example, describe if your prototype cost factors scale linearly according to a particular variable such as hardware (processors), users, nodes, transactions, population or providers or any combination of such HIE variables.

Prototype Information

Assume that only the Critical Access Hospital and Small Physician groups (the last two in the list below) will require integration from scratch, with you acting as the HIE platform. For the other entities assume they will provide NHIN messaging capabilities and C32 CCD exchange, and that they can support either NCPDP/X12 or wrappers of those elements for Eligibility, Medication History and e-Prescribing and similarly HL7 2.5.1 messaging or wrappers for Lab receipt.

Institutional connections (nodes):
- The Missouri State ESB supplying medication history and lab results,
- One hospital system using its own HIO for CCDs, e-prescribing, lab orders/results via NHIN gateway or similarly specified protocols

- One regional HIO/Community HIO providing clinical information exchange via NHIN Messaging specifications
- One physician group participating in an HIO to exchange CCDs, e-prescribing, and lab orders/ results via HL7 2.5.1 bidirectional interfaces.

Direct Connections (HIE Platform):

- One Critical Access Hospital using the Statewide HIO for CCDs, e-prescribing, lab orders / results and administrative transactions via HL7 2.5.1 interfaces
- Three small practices using the respondent‘s proposed solution‘s services directly and integrating 2 integrated PM/EHR systems via HL7 2.5.1 messages (6 providers)

J. RFI Respondents

Respondents are listed alphabetically.

- ACS
- AT&T
- Axolotl
- CareEvolution
- Carefx & Initiate
- CGI Technologies & Solutions
- CNSI (Oracle partner)
- GSI Health
- Harris Corporation
- IBM
- Infocrossing
- LACIE & Tiger Institute
- Medicity
- MEPS Corporation (PattiDoc)
- Microsoft
- NeHII & Bass & Associates
- Oracle
- Sandlot
- ScImage
- Vangent

K. RFI Response Analysis Summary

Functional Analysis

Functional Analysis Findings

- Responses confirmed and many suggested extending HIO functional capacity
- Multiple vendor solutions are maturing and have demonstrated capabilities in the marketplace
- Only one vendor has significant production experience in RHIO and statewide HIE
- Comprehensive offering suggested both messaging pull and push integration frameworks
- Solutions widely supported or plan to support NHIN Connect specifications in order to connect to nationwide and federal data sources
- Access and authentication can be provided as statewide services
- Patient identification implementation varied widely across proposals – functional standards may need to be set for consistent and trusted patient identity resolution
- Multi-payer portal for administrative transactions is a consistent proposed function via Availity
- Many respondents proposed tackling a data warehouse for quality and public health reporting
- One vendor included personal health records, clinical decision support and care coordination as stage 1 functions
- Several Responses included personal health records (PHRs), quality reporting (QR), public health, image management
- Two vendors included radiology images, population based health management and reporting and rules based engine as a statewide HIO service
- One vendor included an AppCloud to host 3rd party applications as a service at a statewide level

Functional Analysis Findings

Exceeded Stage 1	Met Stage 1	Incomplete
11	3	6

Additional Functions

- Data Warehousing
- NHIN Connect
- Personal Health Record
- Application Hosting
- Radiology Image Exchange
- Quality Reporting
- Public Health
- EHR Lite

Issues / Concerns

- Some proposed functions may be proprietary to the responding vendors – will be important to ensure that they can be offered as statewide services
- Relationship between functions (ability to) vs implementation (used and deployed) is unclear
- Much is claimed but unclear how much is actually in operation

Recommendations

- In request for proposal (RFP), provide flexibility for respondents to include additional services in order to maximize prototype value
- Evaluate participant readiness to implement additional functions
- Include current state and use cases in RFP to provide a view into participating organizations capabilities and target outcomes

Technical Analysis

Technical Analysis Findings
➢ Most responses proposed using a standards based web services oriented architecture with an enterprise service bus ➢ Many vendors' current offerings can support core infrastructure needs: Service oriented architecture (SOA), UDDI (standard for web services directory/registry for looking up services), registries ➢ Many vendors' current offerings can support core clinical services: Summary exchange, Labs, Meds ➢ Services governance was a common process that was highlighted as a way for the statewide HIO to govern which services will be provided ➢ Inclusion of existing HIOs and the proposal ability to support both approaches (hybrid) was not always clearly delineated ➢ Hosting and infrastructure for deployment varied widely from software as a service (SaaS) to pure licensing and MO to locate ➢ Analysis of mixing and matching services across vendors may be needed ➢ Deploying services across vendors increases complexity and prototype risks ➢ Partnerships lacked integration making it more difficult to compare

Technical Analysis Findings		
Aligned with RFI	**Differed from RFI**	**Incomplete**
16	0	4
Additional Components	**Issues / Concerns**	
➢ Deployment options and requirements ➢ Message push support at service bus ➢ Existing application integration	➢ Vendor proposals are at different levels of EHR interoperability ➢ HIO service infrastructure needs to be separated from HIO functionality and applications ➢ Specific HIO service standards and consumption was raised for clarification by several responses	
Recommendations		
➢ Provide additional technical requirements in RFP ➢ Set and specify service levels across statewide network ➢ Define specific organizations who will participate in prototype ➢ Clearly define role of HIOs and participants		

Implementation and Timeline Analysis

Implementation and Timeline Analysis Findings
➢ Core infrastructure and services implemented in 6 months starting Q4 2010 – most either can't make this or didn't respond with timelines ➢ Proposals suggest performing a prototype of 5 organizations before generalized roll out ➢ Implementation infrastructure and project management processes are key to on-time and on-budget delivery ➢ Respondents demonstrated varying levels of implementation maturity and capacity

Implementation and Timeline Analysis Findings		
Agree with 6 months 6	**Disagree** 4	**Incomplete** 10
Key Implementation Methods ➢ Include HIO service and function governance methods and tools ➢ Specification of project team structure and requirements will help clarify budget ➢ Implementation costs and processes were equally significant when compared to technology	**Issues / Concerns** ➢ Breakdown of implementation tasks were not granular enough to validate timing feasibility – respondents either didn't understand or didn't respond to our prototype + scaling idea ➢ Further definition of prototype control, milestones and deliverables will be important for consistent RFP responses	
Recommendations ➢ Define prototype approach, control structure, responsibilities and deliverables ➢ Select project and implementation templates and methodology ➢ Provide high level project plan to set granularity and expectations		

Pricing Analysis

Pricing Analysis Findings

- Proposed prototype budgets ranged from $500,000 to $17,000,000
- Large variety of pricing models including subscription, licensing, maintenance, per interface transactions
- Pricing timeframes range in periods – mostly yearly

Contained Pricing	Partial Pricing	No Pricing
4	8	8

Pricing Approaches	Issues / Concerns
• Five vendors took a serious pass at prototype model, still difficult to interpret • Those who proposed models included implementation, per interface, ongoing, and application type fees • Most provided pro forma or nothing	• Most appear expensive whether commercial or open source • May be hard to draw conclusions based on limited responses

Recommendations

- Provide very specific RFP prototype details to get reasonable pricing
- Provide more detail on hub connects vs direct provider connects

L. Regional HIO & Border State Consent Policies

Regional HIO	Consent Policies	Language/Addl Information
Kansas City Bi-State HIE (KC-BHIE)	Under development	Privacy, Security, and Legal Committee is developing policy recommendation Kansas and Missouri are currently considering different consent policies
Lewis and Clark Information Exchange (LACIE)	Opt-out	
Springfield	Under development	Monitoring MO-HITECH guidance
St. Louis Integrated Health Network	Under development	Beginning to develop consent language Monitoring MO-HITECH guidance
CareEntrust *(Personally controlled record)*	N/A Consent policies refer to the consumers' desire to participate in a PHR	Consumers are given access to the CareEntrust PHR through medical benefit enrollment Consumers control provider access to the information in their PHR at the organizational level

Table 1. Missouri HIE Effort Consent Policies

State	Consent Policies	Sensitive Health Information	Lead Organization & Recommendations
Arkansas	Under development	Not yet addressed	**Arkansas Health Information Exchange -** http://recovery.arkansas.gov/hie/ Legal & Policy Workgroup began meeting in March 2010.
Illinois	Under development	Not yet addressed	**Illinois Health Information Exchange -** http://www.hie.illinois.gov/ The Privacy & Security Working Group will recommend how to address the issue of patient control of data and patient consent in the design of the state-level HIE.
Iowa	Under development *Opt-out*	Seeking changes under state law	**Iowa eHealth –** http://www.idph.state.ia.us/ehealth/default.asp *Workgroup Recommendation* – Establish clear patient consent policies within the HIE privacy and security framework**;** Consider statutory changes in Iowa law to allow protected health information to be exchanged among providers for treatment-related purposes without additional patient consent
Kansas	Under development *Opt-out*	Seeking changes under state law	**Kansas e-Health Advisory Council –** http://www.kanhit.org/ It is anticipated that the Council will seek legislative changes in support of an opt-out model.
Kentucky	Opt-out	Unclear whether included	**Kentucky Health Information Exchange-** http://chfs.ky.gov/os/goehi/khie.htm Patients have the right to opt-out at any time and not participate in the exchange of their personal health information through the KHIE. There is no emergency access if a patient has chosen to opt-out.
Nebraska	Opt-out	Specified classes of sensitive data are excluded	**Nebraska Health Information Initiative -** http://nehii.org/ Participation in the Nebraska Health Information Initiative (NeHII) is voluntary. However, health information will be included in NeHII unless the consumer opts out. Some types of specially protected health information is excluded from the exchange.

		from exchange	
Oklahoma	*Voluntary* Opt-in	Under consideration	**Oklahoma Health Information Exchange** -http://www.okhca.org/ State Legislature ordered the creation of a standard authorization form for health information exchange. Providers who use the *optional* form and follow are immunized from liability under state privacy laws. (Oklahoma SB 1420)
Tennessee	Opt-out	Not yet addressed	**Health Information Partnership for Tennessee -** http://www.hiptn.org/ The Privacy and Security Workgroup will revisit its opt-out/patient notification recommendations upon review of sensitive health information.

Table 2. Border State Consent Policies

M. Budget

Budget Summary - Operational Plan

Fringe Rate 2010					***33.00%***					
Fringe Rate 2011-2013	Actual				***33.00%***					
	Q1 10	Q2 10	Q3 10	Q4 10	**CY 2010**	Q1 11	Q2 11	Q3 11	Q4 11	**CY 2011**
MO-HITECH Office										
Staff										
Salaries	0	0	0	51,250	51,250	95,000	95,000	95,000	95,000	380,000
Fringe	0	0	0	16,913	16,913	31,350	31,350	31,350	31,350	125,400
Office Equipment	0	0	0	61,250	61,250	0	0	0	0	0
Office Operations	0	0	0	15,000	15,000	15,000	15,000	15,000	15,000	60,000
Supplies	0	0	0	4,032	4,032	4,032	4,032	4,032	4,032	16,128
Advisory Board										
Consultant to Advisory Board	16,800	28,800	0	0	45,600	0	0	0	0	0
Consultant - Operational Plan	98,000	168,000	0	0	266,000	0	0	0	0	0
Travel	0	8,054	8,054	8,054	24,162	0	0	0	0	0
Professional Meetings and Activities	0	8,054	8,054	8,054	24,162	0	0	0	0	0
HIE Not For Profit Public Private Board										
Consultant to Public Private Board	0	0	0	18,750	18,750	17,500	17,500	17,500	17,500	70,000
Travel	0	0	0	10,739	10,739	10,739	10,739	10,739	10,739	42,955
Insurance	0	0	0	7,500	7,500	7,500	7,500	7,500	7,500	30,000
Professional Meetings and Activities	0	0	0	10,739	10,739	10,739	10,739	10,739	10,739	42,955
Implementation										
Implementation Contract										

Budget Summary - Operational Plan

Fringe Rate 2010					***33.00%***					
Fringe Rate 2011-2013	Actual				***33.00%***					
	Q1 10	Q2 10	Q3 10	Q4 10	**CY 2010**	Q1 11	Q2 11	Q3 11	Q4 11	**CY 2011**
Project Manager	0	0	0	25,000	25,000	25,000	25,000	25,000	25,000	100,000
System development	0	0	111,222	1,000,000	1,111,222	1,510,303	1,510,303	1,510,303	1,510,303	6,041,213
Training Materials	0	0	0	0	0	30,076	30,076	30,076	30,076	120,302
Business and Financial Sustainability										
Consultant - Group Support	0	0	0	0	0	25,000	25,000	25,000	25,000	100,000
Consultant - Evaluation / Measures	0	0	0	0	0	12,500	12,500	12,500	12,500	50,000
Supplies / Expenses	0	0	0	0	0	3,500	3,500	3,500	3,500	14,000
Technical and Operations										
Consultant - Group Support	0	0	0	0	0	12,500	12,500	12,500	12,500	50,000
Supplies / Expenses	0	0	0	0	0	1,750	1,750	1,750	1,750	7,000
Legal / Policy										
Consultant - Group Support	0	0	0	0	0	12,500	12,500	12,500	12,500	50,000
Contracted Legal Counsel	0	0	0	0	0	56,250	56,250	56,250	56,250	225,000
Supplies / Expenses	0	0	0	0	0	1,750	1,750	1,750	1,750	7,000
Consumer Advisory Counsel										
Consultant - Group Support	0	0	0	0	0	12,500	12,500	12,500	12,500	50,000
Supplies / Expenses	0	0	0	0	0	1,750	1,750	1,750	1,750	7,000
Outreach and Communications										
Stakeholder Communications	0	0	0	0	0	81,250	81,250	81,250	81,250	325,000

Budget Summary - Operational Plan

Fringe Rate 2010					***33.00%***					
Fringe Rate 2011-2013	Actual				***33.00%***					
	Q1 10	Q2 10	Q3 10	Q4 10	**CY 2010**	Q1 11	Q2 11	Q3 11	Q4 11	**CY 2011**
Governance Workgroup										
Consultant - Group Support	16,800	28,800	12,500	12,500	70,600	0	0	0	0	0
Supplies / Expenses	0	1,750	1,750	1,750	5,250	0	0	0	0	0
Finance Workgroup										
Consultant - Group Support	16,800	28,800	12,500	12,500	70,600	0	0	0	0	0
Supplies / Expenses	0	1,750	1,750	1,750	5,250	0	0	0	0	0
Infrastructure Workgroup										
Consultant - Group Support	16,800	28,800	12,500	12,500	70,600	0	0	0	0	0
Supplies / Expenses	0	1,750	1,750	1,750	5,250	0	0	0	0	0
Business Ops Workgroup										
Consultant - Group Support	16,800	28,800	12,500	12,500	70,600	0	0	0	0	0
Consultant - Evaluation / Measures	0	35,000	17,500	17,500	70,000	0	0	0	0	0
Supplies / Expenses	0	1,750	1,750	1,750	5,250	0	0	0	0	0
Legal Workgroup										
Consultant - Group Support	16,800	28,800	12,500	12,500	70,600	0	0	0	0	0
Contracted Legal Counsel	53,009	50,400	56,250	56,250	215,909	0	0	0	0	0
Supplies / Expenses	0	1,750	1,750	1,750	5,250	0	0	0	0	0
Consumer Engagement Workgroup										
Consultant - Group Support	16,800	28,800	12,500	12,500	70,600	0	0	0	0	0
Supplies / Expenses	0	1,750	1,750	1,750	5,250	0	0	0	0	0

Budget Summary - Operational Plan

Fringe Rate 2010					***33.00%***					
Fringe Rate 2011-2013	Actual				***33.00%***					
	Q1 10	Q2 10	Q3 10	Q4 10	**CY 2010**	Q1 11	Q2 11	Q3 11	Q4 11	**CY 2011**
Stakeholder Communications	0	187,500	93,750	93,750	375,000	0	0	0	0	0
					2,808,327					**7,913,953**
Federal Grant					*2,672,847*					*7,127,054*
Match					*135,480*					*786,899*
					4.82%					9.94%
First 3 quarters	268,609	669,108	380,330		1,318,047					5,935,465
Federal Grant	268,609	669,108	380,330		*1,318,047*					*5,395,877*
Match	0	0	0		*0*					*539,588*
					0.00%					9.09%
Last quarter				1,490,280	1,490,280					1,978,488
Federal Grant				1,354,800	*1,354,800*					*1,731,177*
Match				135,480	*135,480*					*247,311*
					9.09%					12.50%

Budget Summary - Operational Plan

Fringe Rate 2010
Fringe Rate 2011-2013

	Q1 12	Q2 12	Q3 12	Q4 12	**CY 2012**	Q1 13	Q2 13	Q3 13	Q4 13	**CY 2013**	**TOTAL**
MO-HITECH Office											
Staff											
Salaries	95,000	95,000	95,000	95,000	380,000	95,000	95,000	95,000	95,000	380,000	**1,191,250**
Fringe	31,350	31,350	31,350	31,350	125,400	31,350	31,350	31,350	31,350	125,400	**393,113**
Office Equipment	0	0	0	0	0	0	0	0	0	0	**61,250**
Office Operations	15,000	15,000	15,000	15,000	60,000	15,000	15,000	15,000	15,000	60,000	**195,000**
Supplies	4,032	4,032	4,032	4,032	16,128	4,032	4,032	4,032	4,032	16,128	**52,416**
Advisory Board											
Consultant to Advisory Board	0	0	0	0	0	0	0	0	0	0	**45,600**
Consultant - Operational Plan	0	0	0	0	0	0	0	0	0	0	**266,000**
Travel	0	0	0	0	0	0	0	0	0	0	**24,162**
Professional Meetings and Activities	0	0	0	0	0	0	0	0	0	0	**24,162**
HIE Not For Profit Public Private Board											
Consultant to Public Private Board	17,500	17,500	17,500	17,500	70,000	0	0	0	0	0	**158,750**
Travel	8,142	8,142	8,142	8,142	32,569	5,500	5,500	5,500	5,500	22,000	**108,263**
Insurance	7,500	7,500	7,500	7,500	30,000	7,500	7,500	7,500	7,500	30,000	**97,500**
Professional Meetings and Activities	8,142	8,142	8,142	8,142	32,569	5,500	5,500	5,500	5,500	22,000	**108,263**
Implementation											
Implementation Contract											
Project Manager	25,000	25,000	25,000	25,000	100,000					0	**225,000**

Budget Summary - Operational Plan

Fringe Rate 2010
Fringe Rate 2011-2013

	Q1 12	Q2 12	Q3 12	Q4 12	**CY 2012**	Q1 13	Q2 13	Q3 13	Q4 13	**CY 2013**	**TOTAL**
System development	487,374	487,374	487,374	487,374	1,949,495					0	**9,101,930**
Training Materials	30,076	30,076	30,076	30,076	120,302	30,076	30,076	30,076	30,076	120,302	**360,906**
Business and Financial Sustainability											
Consultant - Group Support	25,000	25,000	25,000	25,000	100,000	0	0	0	0	0	**200,000**
Consultant - Evaluation / Measures	12,500	12,500	12,500	12,500	50,000	0	0	0	0	0	**100,000**
Supplies / Expenses	3,500	3,500	3,500	3,500	14,000	3,500	3,500	3,500	3,500	14,000	**42,000**
Technical and Operations											
Consultant - Group Support	12,500	12,500	12,500	12,500	50,000	0	0	0	0	0	**100,000**
Supplies / Expenses	1,750	1,750	1,750	1,750	7,000	1,750	1,750	1,750	1,750	7,000	**21,000**
Legal / Policy											**0**
Consultant - Group Support	12,500	12,500	12,500	12,500	50,000	0	0	0	0	0	**100,000**
Contracted Legal Counsel	15,000	15,000	15,000	15,000	60,000	15,000	15,000	15,000	15,000	60,000	**345,000**
Supplies / Expenses	1,750	1,750	1,750	1,750	7,000	1,750	1,750	1,750	1,750	7,000	**21,000**
Consumer Advisory Counsel											
Consultant - Group Support	12,500	12,500	12,500	12,500	50,000	0	0	0	0	0	**100,000**
Supplies / Expenses	1,750	1,750	1,750	1,750	7,000	1,750	1,750	1,750	1,750	7,000	**21,000**
Outreach and Communications											
Stakeholder Communications	81,250	81,250	81,250	81,250	325,000	81,250	81,250	81,250	81,250	325,000	**975,000**
Governance Workgroup											

Budget Summary - Operational Plan

Fringe Rate 2010
Fringe Rate 2011-2013

	Q1 12	Q2 12	Q3 12	Q4 12	CY 2012	Q1 13	Q2 13	Q3 13	Q4 13	CY 2013	TOTAL
Consultant - Group Support	0	0	0	0	0	0	0	0	0	0	**70,600**
Supplies / Expenses	0	0	0	0	0	0	0	0	0	0	**5,250**
Finance Workgroup											
Consultant - Group Support	0	0	0	0	0	0	0	0	0	0	**70,600**
Supplies / Expenses	0	0	0	0	0	0	0	0	0	0	**5,250**
Infrastructure Workgroup											
Consultant - Group Support	0	0	0	0	0	0	0	0	0	0	**70,600**
Supplies / Expenses	0	0	0	0	0	0	0	0	0	0	**5,250**
Business Ops Workgroup											
Consultant - Group Support	0	0	0	0	0	0	0	0	0	0	**70,600**
Consultant - Evaluation / Measures	0	0	0	0	0	0	0	0	0	0	**70,000**
Supplies / Expenses	0	0	0	0	0	0	0	0	0	0	**5,250**
Legal Workgroup											**0**
Consultant - Group Support	0	0	0	0	0	0	0	0	0	0	**70,600**
Contracted Legal Counsel	0	0	0	0	0	0	0	0	0	0	**215,909**
Supplies / Expenses	0	0	0	0	0	0	0	0	0	0	**5,250**
Consumer Engagement Workgroup											
Consultant - Group Support	0	0	0	0	0	0	0	0	0	0	**70,600**
Supplies / Expenses	0	0	0	0	0	0	0	0	0	0	**5,250**
Stakeholder Communications	0	0	0	0	0	0	0	0	0	0	**375,000**

Budget Summary - Operational Plan

Fringe Rate 2010
Fringe Rate 2011-2013

		Q1 12	Q2 12	Q3 12	Q4 12	**CY 2012**	Q1 13	Q2 13	Q3 13	Q4 13	**CY 2013**	**TOTAL**
						3,636,463					**1,195,830**	**15,554,573**
Federal Grant	Federal Grant					*3,068,266*					*896,873*	**13,765,040**
Match	Match					*568,197*					*298,958*	**1,789,534**
						15.63%					25.00%	
First 3 quarters	First 3 quarters					2,727,347					896,873	**10,877,732**
Federal Grant	Federal Grant					*2,386,429*					*672,654*	**9,773,008**
Match	Match					*340,918*					*224,218*	**1,104,724**
						12.50%					25.00%	
Last quarter	Last quarter					909,116					298,958	**4,676,842**
Federal Grant	Federal Grant					*681,837*					*224,218*	**3,992,032**
Match	Match					*227,279*					*74,739*	**684,809**
						25.00%					25.00%	

Grant Submission - Operational Plan Budget Changes

	CY 2010	CY 2011	CY 2012	CY 2013	TOTAL	Reason for Change
MO-HITECH Office						
Staff						
Salaries	(278,750)	50,000	50,000	50,000	**(128,750)**	1) Timing (CY 10) - operations start Q4; 2) Salary structure revised
Fringe	(173,531)	(73,029)	(73,029)	(73,029)	**(392,618)**	1) Timing (CY 10); 2) Revised fringe rate
Office Equipment	0	0	0	0	**0**	
Office Operations	(45,000)	0	0	0	**(45,000)**	Timing (CY 10) - operations start Q4
Supplies	(12,096)	0	0	0	**(12,096)**	Timing (CY 10) - operations start Q4
Advisory Board						
Consultant to Advisory Board	(10,650)	0	0	0	**(10,650)**	Update to actual
Consultant - Operational Plan (Manatt)	(34,000)	0	0	0	**(34,000)**	Update to actual
Travel	(8,054)	0	0	0	**(8,054)**	Update to actual
Professional Meetings and Activities	(8,054)	0	0	0	**(8,054)**	Update to actual
HIE Not For Profit Public Private Board						
Consultant to Public Private Board	0	0	0	0	**0**	
Travel	0	0	0	0	**0**	
Insurance	0	0	0	0	**0**	
Professional Meetings and Activities	0	0	0	0	**0**	
Implementation						
Implementation Contract	0	0	0	0		
Project Manager	(75,000)	0	0	0	**(75,000)**	Timing (CY 10) - operations start Q4
System development	111,222	791,213	0	0	**902,435**	Reallocation of projected net lapse in other budget lines

Grant Submission - Operational Plan Budget Changes

	CY 2010	CY 2011	CY 2012	CY 2013	TOTAL	Reason for Change
Training Materials	0	0	0	0	**0**	
Business and Financial Sustainability						
Consultant - Group Support	0	100,000	100,000	0	**200,000**	Transformation of Business Op and Finance Workgroups
Consultant - Evaluation / Measures	0	50,000	50,000	0	**100,000**	Transformation of Business Op and Finance Workgroups
Supplies / Expenses	0	14,000	14,000	14,000	**42,000**	Transformation of Business Op and Finance Workgroups
Technical and Operations						
Consultant - Group Support	0	50,000	50,000	0	**100,000**	Transformation of Technology Workgroup
Supplies / Expenses	0	7,000	7,000	7,000	**21,000**	Transformation of Technology Workgroup
Legal / Policy						
Consultant - Group Support	0	50,000	50,000	0	**100,000**	Transformation of Legal Workgroup
Contracted Legal Counsel	0	225,000	60,000	60,000	**345,000**	Transformation of Legal Workgroup
Supplies / Expenses	0	7,000	7,000	7,000	**21,000**	Transformation of Legal Workgroup
Consumer Advisory Counsel						
Consultant - Group Support	0	50,000	50,000	0	**100,000**	Trasformation of Consumer Engagement Workgroup
Supplies / Expenses	0	7,000	7,000	7,000	**21,000**	Trasformation of Consumer Engagement Workgroup
Outreach and Communications						
Stakeholder Communications	0	325,000	325,000	325,000	**975,000**	Transfer from Consumer Engagement Workgroup (CY 11 on)

Grant Submission - Operational Plan Budget Changes

	CY 2010	CY 2011	CY 2012	CY 2013	TOTAL	Reason for Change
Governance Workgroup						
Consultant - Group Support	10,600	(50,000)	(50,000)	0	**(89,400)**	1) Update to actual (CY 10); 2) Governance Workgroup ends (CY 11 on)
Supplies / Expenses	(1,750)	(7,000)	(7,000)	(7,000)	**(22,750)**	1) Update to actual (CY 10); 2) Governance Workgroup ends (CY 11 on)
Finance Workgroup						
Consultant - Group Support	10,600	(50,000)	(50,000)	0	**(89,400)**	1) Update to actual (CY 10); 2) Transform to Business and Financial Sustainability
Supplies / Expenses	(1,750)	(7,000)	(7,000)	(7,000)	**(22,750)**	1) Update to actual (CY 10); 2) Transform to Business and Financial Sustainability
Infrastructure Workgroup						
Consultant - Group Support	10,600	(50,000)	(50,000)	0	**(89,400)**	1) Update to actual (CY 10); 2) Transformed to Technology and Operations
Supplies / Expenses	(1,750)	(7,000)	(7,000)	(7,000)	**(22,750)**	1) Update to actual (CY 10); 2) Transformed to Technology and Operations
Business Ops Workgroup						
Consultant - Group Support	10,600	(50,000)	(50,000)	0	**(89,400)**	1) Update to actual (CY 10); 2) Transform to Business and Financial Sustainability
Consultant - Evaluation / Measures	0	(50,000)	(50,000)	0	**(100,000)**	1) Update to actual (CY 10); 2) Transform to Business and Financial Sustainability
Supplies / Expenses	(1,750)	(7,000)	(7,000)	(7,000)	**(22,750)**	1) Update to actual (CY 10); 2) Transform to Business and Financial Sustainability
Legal Workgroup						
Consultant - Group Support	10,600	(50,000)	(50,000)	0	**(89,400)**	1) Update to actual (CY 10); 2) Transform to Legal / Policy
Contracted Legal Counsel	(9,091)	(225,000)	(60,000)	(60,000)	**(354,091)**	1) Update to actual (CY 10); 2) Transform to Legal / Policy
Supplies / Expenses	(1,750)	(7,000)	(7,000)	(7,000)	**(22,750)**	1) Update to actual (CY 10); 2) Transform to Legal / Policy

Grant Submission - Operational Plan Budget Changes

	CY 2010	CY 2011	CY 2012	CY 2013	TOTAL	Reason for Change
Consumer Engagement Workgroup						
Consultant - Group Support	10,600	(50,000)	(50,000)	0	**(89,400)**	1) Update to actual (CY 10); 2) Transform to Consumer Advisory Council
Supplies / Expenses	(1,750)	(7,000)	(7,000)	(7,000)	**(22,750)**	1) Update to actual (CY 10); 2) Transform to Consumer Advisory Council
Stakeholder Communications	0	(325,000)	(325,000)	(325,000)	**(975,000)**	Transfer to Outreach and Communicaitons (CY 11 on)
	(489,904)	**711,184**	**(80,029)**	**(30,029)**	**111,222**	
Federal Grant	*(550,424)*	*640,470*	*(67,524)*	*(22,522)*	**(0)**	
Match	*60,520*	*70,714*	*(12,505)*	*(7,507)*	**111,223**	
	4.82%	9.94%	15.63%	25.00%		
First 3 quarters	*(1,155,626)*	533,388	(60,022)	(22,522)	**(704,782)**	
Federal Grant	*(1,155,626)*	*484,898*	*(52,519)*	*(16,891)*	**(740,138)**	
Match	*0*	*48,490*	*(7,503)*	*(5,630)*	**35,357**	
		9.09%	12.50%	25.00%		
Last quarter	*665,722*	177,796	(20,007)	(7,507)	**816,004**	
Federal Grant	*605,202*	*155,572*	*(15,005)*	*(5,630)*	**740,138**	
Match	*60,520*	*22,225*	*(5,002)*	*(1,877)*	**75,866**	
	9.09%	12.50%	25.00%	25.00%		

Grant Submission - Operational Plan Budget Changes

	CY 2010	CY 2011	CY 2012	CY 2013	TOTAL	Reason for Change
Total Consultants	18,950	(350,000)	(350,000)	0	(681,050)	
Total Salary & Fringe	(452,281)	(23,029)	(23,029)	(23,029)	**(521,368)**	

Revised Staff Salaries

Director	115,000
Project Manager	80,000
Communications Director	65,000
Clerical	35,000
Clerical	35,000
	330,000